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ABSTRACT

The effects of a tutor-tutee relationship on the reading achievement and achievement motivation of underachieving black male children were investigated. A group of 41 tutees and their controls as well as a group of 41 tutors and their controls, all from lower socioeconomic backgrounds, were randomly selected. All subjects were given a nonverbal IQ test and were pretested and post-tested on reading achievement. The tutors and their controls were also pretested and post-tested on two psychological variables: standard-setting and affect mediating self-evaluation for a task of forming words out of 10 scrambled four-letter words in 1 minutes each trial for eight trials. The tutoring was conducted for 12 weeks. Analysis of obtained data yielded the following findings: (1) the tutees made significantly greater gains in reading achievement than their controls ($p<.05$), (2) the tutors made significantly greater gains in reading achievement than their controls ($p<.07$), (3) the tutors established a lower and more realistic standard than did the controls ($p<.01$), (4) the tutors took less time to make self-evaluations, and (5) the tutors did not administer positive self-evaluations more frequently than their controls. Tables, a bibliography, and appendixes are included. (AW)

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TUTORING:
ITS EFFECTS ON READING ACHIEVEMENT, STANDARD-SETTING AND AFFECT-MEDIATING SELF-EVALUATION FOR BLACK MALE UNDERACHIEVERS IN READING

by

EILEEN EVELYN LIETTE

Submitted in partial fulfillment of the requirements for
the Degree of Doctor of Philosophy

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Department of Education

CASE WESTERN RESERVE UNIVERSITY

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TUTORING:
ITS EFFECTS ON READING ACHIEVEMENT, STANDARD-SETTING AND AFFECT-MEDIATING SELF-EVALUATION FOR BLACK MALE UNDERACHIEVERS IN READING

Abstract
by
Eileen Evelyn Liette

The major purpose of the study was to determine what effects a specific strategy, namely tutoring, had on reading achievement of underachieving black males who were tutored by older underachieving black males of similar background; secondly, this study sought to measure the effects on reading achievement of underachieving black males who became tutors of reading to younger peers.

In addition, this study attempted to measure the possible psychological effects which the tutoring experience in this one-to-one realtionship had on the tutor. Two specific determinants which were pursued in the study were *standard-setting* and *affect-mediating self-evaluation* of need for achievement as operationalized by Katz (1967) and further researched by Eiszler (1969) and Mahan (1970).

A randomly assigned sample of forty-one boys with matched controls who came from lower socio-economic, minority group families and attend a large midwestern inner-city school system were tutors in this study.

Likewise, another randomly assigned sample of forty-one younger boys with matched controls who also came from the same

background as the tutors, were the tutees in this study.

In a large group situation, the subjects were given a non-verbal battery intelligence test and a standardized reading achievement test. From the results of these tests, underachievers were determined. After matching potential tutors and tutees, random assignment was made. Tutor-subjects and their controls were then individually administered a series of eight trials of ten four-letter scrambled words and asked to unscramble as many as possible within the one minute-and-a-half time limit of each trial. Prior to each trial the subjects were asked to establish for themselves and report a standard of performance. Following each trial the tutor-subjects and controls were asked to evaluate and report their performance. Timing in seconds was part of the evaluation in determining how long it took the subjects to make their self-evaluations.

After pre-testing, tutoring sessions were conducted for a period of twelve weeks. The project was concluded with post-testing on reading achievement, for tutees, tutors and their controls, as well as post-testing on standard-setting and affect-mediating self-evaluation for tutors and their controls.

The significant findings of the study were as follows:

1. Underachieving black males who were tutored by older underachieving black males of similar background made significant gains in reading achievement at the .05 level of confidence.

2. Underachieving black males who tutored and accepted a leadership role with younger underachieving black males made gains in reading achievement significant at the .07 level of confidence.

3. Underachieving black males who tutored younger peers established a lower and more realistic standard than did the controls, significant at the .01 level of confidence.

4. Underachieving black males who tutored younger peers tended to take less time to make self-evaluations, significant near the .10 level of confidence.

5. Tutors did not administer positive self-evaluations more frequently than their controls. There was no level of significance.

The major implication of the study is to suggest support for the theory of a psychological situation, namely tutoring, for effective change in behavior. However, it appears that the tutoring should be conducted over a longer period of time for more effective and more significant changes to take place. Some psychological changes seem to appear earlier than academic-achievement changes.

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CHAPTER ONE

INTRODUCTION

Educators today realize that there are many different resources in teaching and learning situations. These resources include another child, parents outside the classroom, and a wealth of material in any given community.

During the decade of the 1960's, educators in schools across the United States have experimented more and more with one of these resources, namely, students of various educational levels teaching each other. The objectives have varied with each reported project or experiment. However, the major purpose seems to be to help the tutee, the tutor, or both. In the past,several techniques have been pursued: some student-tutors have taught the tutee with teacher prescribed remedial materials; other student-tutors have carried out the responsibility of making their own lesson plans.

The practice of students helping each other is no novelty. "Big brother" or "big sister" from time to time in the past have lent a helping hand to a younger sibling or peer. In the "little red school house days" when six to twenty students of varying ages studied in one classroom under one teacher, students relied heavily on learning from each other. In the 1820's under the Lancastrian Monitorial System the teacher instructed a group of older students who in turn drilled the younger ones on the same lesson. Even in today's classroom, teachers who use the project method usually assign tasks to small groups of children partly in the expectation that they will learn from each other.

The classic concept of tutoring has directed attention to the tutee or learner rather than to the tutor. In the present research, both the tutee and the tutor were considered.

This investigation evolved from a pilot study with a small group of black male underachievers of elementary school age who acted as tutors for a younger peer group. The question was raised in the pilot study as to whether a tutorial situation, if carried out over a reasonable period of time, would account for substantial reading achievement gains for both the tutee and the tutor.

Additionally, through such a situation, would the black male underachiever be able to set more realistic standards, while at the same time, through the experiences of tutoring, be able to derive an internal satisfaction that he can do something well?

Cloward's recent study (1966), using teen-age potential drop-outs as tutors for fifth and sixth grade children, lent support to hypotheses that this may be an effective means of increasing reading achievement for elementary level underachievers with beneficial "side effects" to the psyche of the tutor.

Thelen's (1969) and Rosner's (1970) work in progress gave added dimensions of further support to such hypotheses.

Finally, resources for the implementation of a similar tutoring experience are probably available in the vast majority of schools throughout the country at a minimal cost of teacher-time and finances. Such an innovation, if effective, would be welcomed by school personnel. This current study is known as 'the LIETTE project", named after the investigator. The letter meanings for the project read: Learning through Innovative Educational Tutor-Tutee Experiences.

Purpose of the Study

The purpose of this study then was to investigate on a larger scale and for a more extended period of time than the pilot study, what effects a specific strategy, namely tutoring, had on reading achievement of underachieving black males who were tutored by older underachieving black males of like backgrounds; secondly, this study sought to measure the effects on reading achievement of underachieving black males who became tutors of reading to younger peers.

In addition, this study attempted to measure the possible effects which the tutoring experience had on the tutor in relation to the two determinants, standard-setting and affect-mediating self-evaluation of need for achievement as operationalized by Katz (1967) and further researched by Eiszler (1969) and Mahan (1970).

Needless to say, one is well aware that among the most discussed, most examined, most written about topics of today are the problems that minority group children face in the world of education.

What is needed now, it would seem, is not more discussion and examination of the problems, but rather a delineation of possible solutions and an exploration of some practical application suggested by earlier successful experiences.

For these reasons this study was carried out with elementary level students from six large inner city schools in a Midwestern locale. All of the students involved in the study belonged to the minority group of black male Americans.

Summary

In this chapter, various resources in teaching and learning were briefly indicated. One specific resource, the student, was given further consideration. It was suggested that students of various levels throughout the past have been able to contribute to learning experiences in a helping-relationship. Recent studies have indicated that such working relationships have given positive direction for further study and research. In this context, the purpose of the study was introduced as an extension of a small pilot study as an attempt to investigate some of the effects and possibilities which a tutoring situation carried on a larger scale and over a reasonable period of time would have, not only on the learner or tutee, but also, on the tutor himself. While answers to these questions have implications for education in general, they are thought to be particularly relevant to the education of minority group children who attend large, urban inner-city schools. The students involved in this study, all elementary-level male underachieving black Americans, were from schools in this environment.

Plan of Presentation

In the next chapter, a review of the literature, both descriptive and empirical studies, is presented. The theoretical rationale upon which this investigation is based, together with derived theoretical hypotheses comprises Chapter Three. In Chapter Four the research design and procedure of the study are discussed. A presentation of each hypothesis and the interpretation of the results of the hypothesis are carefully examined in Chapter Five. Summary and implications of the study conclude the major section of the content. Appendices are given, followed by a list of references.

CHAPTER TWO

REVIEW OF THE LITERATURE

John Steinbeck has said, "Learning to read is the most difficult and revolutionary thing that happens to the human brain."

UNDERACHIEVEMENT IN READING

Despite the difficulty of the task, many adults who went through school systems in the past did apparently learn to read. They are baffled by today's news that a large portion of children, as well as a segment of the adult population, is not learning to read at all or has acquired only limited ability in reading.

The full extent of the reading problem is not known. What evidence there is, however, seems to indicate that reading disability affects a surprisingly large proportion of our population.

James E. Allen, former U. S. Commissioner of Education, in a recent address states:

> From a variety of statistical information accumulated by the Office of Education regarding reading deficiencies throughout the country these shocking facts stand out:
>
> One out of every four students nationwide has significant reading deficiencies.
>
> In large city school systems up to half of the students read below expectation.
>
> There are more than three million illiterates in our adult population.
>
> About half of the unemployed youth in New York City, ages 16-21, are functionally illiterate.

> Three-quarters of the juvenile offenders in New York City are two or more years retarded in reading.
>
> In a recent U. S. Armed Forces program called Project 100, 000, 68. 2 percent of the young men fell below grade seven in reading and academic ability. (1969, p. 2).

He states further:

> The tragedy of these statistics is that they represent a barrier to success that for many young adults produces the misery of a life marked by poverty, unemployment, alienation, and, in many cases, crime.
>
> It must be recognized, also, however, that for the majority who do acquire the basic reading skills, there can also be a barrier which limits the fulfillment of their right to read. This barrier exists when the skill of reading is not accompanied by the desire to read. We fail, therefore, just as much in assuring the right to read when the desire is absent as when the skills are missing (1969, p. 3).

The reading achievement of all youth is, therefore, a matter of increasing importance to the development of the individual citizen and our society as a whole. The technological advances of our society require that more people perform at higher levels to fill the manpower needs of our economy, and the complexity of living in a modern urban community demands higher basic literacy levels than ever before in the history of our country. The student whose achievement is not attuned to the increasing demands of the nation's economy may find himself in a poor competitive position when he enters the labor market.

While underachievement is prevalent in all groups, the structure of opportunities available to youth is one of the variables that significantly shapes the probability of high scholastic motivation and achievement. Our schools and society set subtly different social and intellectual environments for subgroups of people. Low socio-economic groups in the community are notably deficient in cultural and academic strengths. They typically have disadvantages that reflect environmental and experiential deprivation resulting in educational disadvantage.

Recently studies reveal that these reading deficiencies have a greater concentration among the male population.

DeBoer states that,

> the number of boys who read either poorly or not at all exceeds that for girls, probably 10 to 1, but no teacher or textbook publisher has figured out a way to act on this information (1958, p. 275).

This estimate is substantiated by others, including Wyatt (1966), Weintraub (1966) and Wozencraft (1967).

The reasons for today's reading failures are many. They include: more children in school, larger classrooms, more complex psychological problems, more distractions, less compulsion to learn, not enough money to provide the personnel, space, and materials to cope with all the problems (Smith, 1970, p. 1).

CULTURAL DEPRIVATION

Among disadvantaged youth, added reasons for the limited reading abilities are cited. Ausubel (1963) points out the lack of language skills, meaning not only a limited vocabulary, but also lack of the very thought processes that lie behind language. Dialect, or the variety of a language, and its relationship to reading and the lack of available reading materials in the dialect may contribute to the reading skill deficit (Baratz and Shuy, 1969).

Deutsch (1964) points out that the disadvantaged reader may have difficulty in handling abstract symbols, in maintaining thought sequences verbally, in interpreting what he experiences, and in communicating what he feels. In addition, he is likely to have any or a combination of visual and auditory difficulties (Deutsch, 1965; Wepman, 1960), a restricted attention span, (Deutsch, 1963), a low self-concept and to be less highly motivated (Ausubel, 1963).

One factor which has been pointed out as related to reading problems rooted in the home is low socio-economic status (Hill and Giommatteo, 1963). Sexton (1961) points out that academic achievement is directly related to the socioeconomic status of the majority of children attending a particular school.

Parental attitudes and behavior may be more significant than the parents' education, income, or race (Dave, 1963).

Other studies repeatedly show that parental attitudes and behavior influence the intellectual and emotional development of children.

> Most disadvantaged children (with the possible exception of those in rural areas) spend less time in direct interaction with their parents than middle class children do. In addition, the parents in deprived homes usually do not have the skills or the language to effectively use the time they spend with their children to foster the language and cognitive development which will help the children in school. . . . Although parents of disadvantaged children are increasingly becoming interested in seeing their children succeed in school, they do not have the same intellectual and material resources that middle-class parents have to enable them to adequately prepare their children for school experiences (Bloom, Davis, Hess, 1965, p. 69).

Riessman (1962) states that these parental feelings about education and the school and their views and values of their own role in this learning process are clearly related to the child's motivation and achievement levels.

Communication in the home is often through gesture and other nonverbal means (Milner, 1951), while the language is terse, and limited in its form and structure. Reading materials--books, newspapers, and magazines--are usually limited. All of these environmental factors can add to the underlying causes of reading failures.

Rewards and punishment (often physical) are immediate (Kohn, 1959; Leshan, 1952; Terrel et. al, 1959). Learning to postpone gratification is as irrelevant to their way of thinking as learning for learning's sake (Gordon, 1964). The disadvantaged child needs immediate feedback, usually in an extrinsic reward, such as money, candy, or other tangibles. Long range goals are not a part of his environmental assets (Zigler and Kanzer, 1962).

Research of the 1960's concerning home environment emphasizes its impact on the disadvantaged child. The evidence tells us that there is a correlation between certain home conditions and poor adjustment in school and its academic experiences (Gordon, 1964).

The Coleman Report (1966) gives evidence that certain sociopolitical processes which influence access to equal educational opportunities have had great impact on student's school avhievement and motivation.

Because of the great concern for the deficit in disadvantaged youth's background, compensatory programs emerged in the 1960's to provide experiences and opportunities which hopefully would lead to a greater increment in reading abilities. Some of these programs have shown improved functioning for some specific large groups of children (Gordon and Wilkerson, 1967). To cite one example: A six-week enrichment program, coupled with a series of informational and supportive conferences with parents, raised both the intelligence and reading readiness scores of a group of Tennessee Negro children to national norms. Such results are significant (Wilkerson, 1965).

Even so, the negative or inconclusive evidence commonly yielded by appraisals of the existing compensatory programs which attempted to compensate for background experience deficits still strongly suggests that many of these programs have not thus far demonstrated the power to check and reverse reading retardation so prevalent among disadvantaged youth.

Motivational Aspects in Achievement

A new emphasis in recent studies has been placed upon aspects of motivation as key factors in academic achievement. Programs involving parents, teachers, and children, and using a wide variety of motivational schemes are subjects of recent studies.

Torrance states that certain factors contribute to lack of motivation, such as continued motivation which is derived from inner stimulation. Often disadvantaged young people are unable to see that school leads to something worthwhile, because they are not given an opportunity to use what they learn.

Torrance further states that in the rush of the classroom the student who is not verbally facile and aggressive may have little chance to communicate or to make discoveries. He also stresses the importance of permitting disadvantaged students to communicate in patterns familiar to them in order to avoid the tension and frustration which result from the lack of communication among cultures (1966).

Teachers are constantly being urged to improve the motivation of disadvantaged students by giving them an opportunity to use a variety of different kinds of mental ability in learning and achieving, by recognizing and rewarding a variety of kinds of excellence, and by giving leadership responsibilities to the pupil (Goldberg, 1963).

Clark, in discussing the problem of the poor reading achievement of disadvantaged students, makes some pertinent recommendations. He suggests that the opportunity to have successful experiences is seen as a vital element in the task of stimulating academic achievement in disadvantaged children. A child who is expected to fail will almost always fail, and thereby reinforce his sense of inferiority. A child who is expected to learn and who is taught and required to learn, will learn; and his experiences of success will increase his sense of worth (1963).

Rosenthal and Jacobson (1968), although certain aspects of their research have been subject to criticism, have pointed out that teacher expectations do change the direction of students' academic achievement. Soares (1969) also points out the relationship between one's expectations of an individual and that individual's self-concept.

Steward and Warnath state that:

> Given adequate ability, prediction of achievement would depend largely on factors of a motivational nature. High achievement in any activity involves sustained goal-oriented behavior aroused in response to classes of incentives, the attainment of which depends on good performance (1965, p. 208).

Clark (1963) states that there is evidence that high intellectual potential exists in a large percentage of individuals from lower class status groups. He suggests that systematic educational programs be designed to provide remedial services and guidance to compensate for past educational deprivation. Such projects would include tutoring programs and aspects of motivation which are now getting wider attention among psychologists and educators. In such programs an individual will exert effort to achieve based on his expectations of success. A low estimate of chances to obtain goals or succeed at a task is usually accompanied by avoidance of achievement-related tasks. Students from low socioeconomic status and disadvantaged backgrounds often believe that the possibility of success is remote. They have been discouraged by lack of success at home and school. Recently, some tutoring programs have noted successes--tutoring may be defined as individual instruction in a one-to-one relationship--as such, it partakes of teaching and certain aspects of counseling and leadership guidance.

At the present time there are few empirical studies of the effects of tutoring; however, there are a number of descriptions of tutoring projects and a proliferation of opinions expressed regarding the various attributes and results of such projects.

Some of the claimed, but not necessarily measured, positive results of tutoring situations, may be enumerated as follows:

1. Helped to spot emotional disturbance shortly after inception.
2. Spotted behavior problems early.
3. Prevented further educational retardation.
4. Reduced incidence of academic or scholastic failure.
5. Raised the achievement scores of some pupils (Cloward, 1966).
6. Reduced failure in high school.
7. Reduced drop-out rates.
8. Improved classroom behavior. (Lansdown, 1952; Caditz, 1963; Horst, 1933; Horst, 1940).

Wayne (1956), in an interesting article attempting to answer the elliptical question of who benefits more, the tutor, or the tutee, makes the following generalization:

> Students can sometimes get across to another student in fifteen minutes certain ideas and concepts that the instructor failed to get across in a full hour of classroom instruction (p. 330).

Carmichael and Turney (1959) suggest that tutoring gives other positive results. These include:

1. that individual tutoring appears to lend itself more easily to uncovering values in the pupil and in the subject matter more than the classroom instruction situation.
2. that the individual tutoring situation appears to be able to motivate pupils more than the classroom situation (p 101).

Riessman suggests the positive aspects of the tutor-tutee relationship in his "helper-therapy principle" (1965). He recommends such an approach as viable in working with disadvantaged youth based on the premise that people who have the same problem in a similar form provide "therapy" to each other. Outstanding social models of this concept can be seen in groups such as Alcoholics Anonymous; Recovery, Inc.; and Synanon (drug addicts). Riessman believes that the work of indigenous paraprofessionals, such as youth workers, employs the principle of "helping self through helping others". He also believes the helper principle to be especially useful in low-income treatment projects because (1) it circumvents the special interclass role distance that arises from the middle class oriented helper being at odds with the low income background client's expectations and style and (2) it may be a principle which is especially attuned to the co-operative trends in lower socioeconomic groups and cultures. He further suggests that the helper principle has great potential in schools. There is evidence that peers in the same age level and background learn from each other in ways that are different from school expectations. Helpers from the same background can often find the right idiom, the right example, and in general, serve as an effective communicator in their own language. He views the development of leadership through leading, and learning through teaching as highly important mechanisms for behavior modification (1965).

Cloward's (1966) imaginative study of the tutor-tutee relationship produced promising results. Predominantly Negro and Puerto Rican fourth and fifth graders who were reading below grade level were tutored for several months by paid volunteer potential dropouts. It was found that children who received four hours of tutoring per week gained six months of growth in reading competence during a five-month period, as compared with an average gain of 3.5 months on the part of the matched controls who were not tutored. The effectiveness of the tutoring, which occurred at the neighborhood center after regular school hours, was not influenced by whether the children were receiving special remedial instruction in reading as part of the regular school program. One of the most startling outcomes of the program was its impact on the tutors themselves. Not only did they help their pupils to read better, but they themselves showed marked gains in their own reading proficiency. In a seven-month period the tutors showed a mean growth in reading skills of 3.4 years as compared with 1.7 years for the controls.

Cloward states:

> Among social workers and educators, there is a growing belief that important contributions to the educational development of culturally disadvantaged children can be made by other young people whose life experiences provide a basis for empathy with the population being served (1966, p. 14).

It seems that with the reported results from the Cloward study (1966) attention was shifted from the anticipation of the benefits that have been reported for the tutee to more careful analyses of the benefits to the tutor.

In more recent tutoring projects, positive values, results, and growth factors have developed in tutors as a consequence of the tutoring leadership experience.

Projects which have reported positive results in one form or another include Mobilization for Youth's Tutorial Project; Project

HELP (Homework, Extra Instruction, Library Services, and Project Assistance); Project T. O. L. D. (Tutors of Language Disorders); Youth-Tutoring-Youth programs (YTY); Project Upward Bound as well as many others.

Thelen (1969) points out that some of the novel elements of a tutor-tutee relationship include (1) meeting individual differences; (2) combating prejudice; (3) improving reading grades, and (4) contributing toward motivation.

Except for Cloward's research, and a few others in progress, the results of tutoring projects have usually embodied opinions which were not supported by careful observation or measurement. Many of them were not based on statistical analyses; rather they were subjective evaluations.

For the middle class white majority, global academic achievement tends to receive high priority in the school setting. The black student achieves in school, but his achievement motive may be more oriented to specific task achievement. Baratz and Baratz (1970) have suggested the black student does not benefit from the standard educational environment and that his motivational patterns may differ for the

> . . . schools fail to use the child's distinct cultural patterns as the vehicle for teaching new skills and additional cultural styles. . . (p. 39).

In the tutoring situation should only the motive to do academic work be considered as the motive to achieve? Does this global achievement motive apply to the kind of achievement we ought to look at when we consider the underachieving student? Or should we set aside this global achievement motive concept and rather consider a task-specific achievement motive?

> A task-specific concept of the motive to achieve is not dependent on the dominant value of a white majority or of a black minority. A global concept of the motive to achieve reflects the majority viewpoint and ignores not only cultural differences but intra-individual differences (Mahan, 1970, p. 3).

In considering this problem of academic motivation, Katz (1967) speculates where the major sources of class and cultural differences in learning willingness are to be found when he states:

> I think the crux of the matter is the differential capability of children from different social backgrounds for vigorous and sustained effort on tasks that are not consistently interesting and attractive and which offer no immediate extrinsic payoff. . . . In this view, effective scholastic motivation is largely reducible to self-control--an outcome of a socialization process involving the internalization of standards of excellence and of affect-mediating evaluative responses to one's own performance (Katz, 1967, p. 140).

In considering McClelland-Atkinson's view, the need to achieve is an acquired, relatively stable, and general feature of personality that impels individuals to strive for success whenever their performance at a task can be evaluated against a standard of excellence.

Katz (1967) theorized that this global achievement motive cannot be applied very profitably to the problem of black underachievement in the classroom.

Katz states:

> In comparing the behavior of individuals from different social backgrounds, it may be necessary to abandon entirely the concept of a single global achievement motive in favor of a notion of many relatively independent achievement motives that are specific to particular areas of competition (1967, p. 144).

At this point Katz addresses himself to covert self-regulatory behaviors which are postulated in the McClelland-Atkinson definition of achievement motive. He theorizes that standard-setting and affect-mediating self-evaluation constitute the core processes underlying the will to perform well in the classroom and elsewhere.

Using Katz ' theorized model concerning these self-regulatory behaviors, Eiszler (1969) sought to determine if there existed significant relationships between achievement in the classroom and these core processes. The results of his investigation showed that underachieving students seem to self-establish standards which are unrealistically high when compared to their actual performance on specific tasks. Eiszler's research suggests that there appears to be a significant relationship between classroom achievement and the frequency of self-administered positive and negative evaluations during the performance of specific cognitive tasks.

Mahan (1970) found similar results when comparing high achieving white boys and low achieving white boys. Her results are as follows: . . . that high achieving white boys set performance standards more congruent with actual performance on cognitive tasks than did low achieving white boys, when socioeconomic status and school anxiety were held constant and high achieving white boys self-administered more positive evaluations and fewer negative evaluations than low achieving white boys during the performance of a cognitive task (p. iv).

Eiszler and Katz both made the assumption that covert self-regulatory behaviors were inferred in the Atkinson-Litwin (1960) theory of achievement motivation. This theory of achievement motivation is related to Rotter's social learning theory in which the two variables of expectancy and reinforcement, operating simultaneously, are determinants of behavior potential.

The theoretical rationale of the current study, based on Rotter's Social Learning Theory, together with the derived theoretical hypotheses, are given in the following chapter with a direct relationship to the literature presented in this present chapter.

Summary

In this chapter selected descriptive and empirical studies, from the areas of reading disability and motivation were reviewed. Several studies were cited which were directly related to the development of a theory of social learning and to the theory of self-regulation of achievement behavior.

In the framework of this literature, chapter three presents the social learning theory rationale upon which this study is based and the derived theoretical hypotheses.

CHAPTER THREE

THEORETICAL RATIONALE AND HYPOTHESES

The theoretical rationale for the current study is based on a social learning theory presented by Rotter (1954). This theory may be described as a molar behavior theory. It uses constructs of expectancy and reinforcement but does not utilize any concept of drive reduction. The basic formula for behavior employs three constructs. The first of these is behavior potential, which is the potentiality of any behavior occurring in any given situation or situations as calculated in relation to any single reinforcement or set of reinforcements. Expectancy, the second, is defined as the probability held by the individual that a particular reinforcement will occur as a function of a specific behavior on his part in a specific situation or situations. Expectancy is independent of the value or importance of the reinforcement. Reinforcement value, the third basic construct, is defined as the degree of preference for any reinforcement to occur if the possibilities of occurrence of this and other reinforcements are equal (Rotter, 1955).

In his theory, Rotter, therefore, stresses the fact that major or basic modes of behavior are learned in social situations and are inextricably fused with needs which require the mediation of other persons for their satisfaction.

These person-needs are either learned or acquired. Early acquired needs or goals in humans (which play a great role in determining later goals) appear as the result of satisfactions and frustrations which, for the most part, are entirely controlled by other people. The goals that arise are then naturally oriented toward relationships with other people.

Rotter (1955) states that the behavior potential is very much a function of the situation and that the psychological situation is one of the important determinants for behavior. His theoretical formula for behavior in which he employs related constructs is shown as follows:

$$B.P._{x,\ s_1 R_a} = f(E_{x,\ R_a,\ s_1}\ \&\ R.V._{a_{1},\ s_1})$$

This formula may be read as follows:

> The potential for behavior x to occur in situation 1 in relation to reinforcement a is a function of the expectancy of the occurrence of reinforcement a following behavior x in situation 1, and the value of reinforcement a in situation 1 (Rotter, 1955, p. 255).

It can be noted in this formula that the psychological situation or s plays a role in predicting to a large extent the motivated or directional behavior of a human being.

Rotter continues,

> However, the specific way in which the measures are involved is through the influence of the situation on the expectancies of the individual. What the situation provides is cues which are related through previous experience to expectancies for behavior-reinforcement sequences. Perhaps stated more simply, what the situation provides is cues which tell the individual what behaviors he may expect will be followed by what reinforcements. Such expectancies are, of course, quantifiable on a scale

> from zero to one hundred. The potentiality of any behavior occurring in any situation, then, since it is determined by expectancy, is in turn determined by the situation (Rotter, 1955, p. 255).

In order to see how a situation affects the value or preference value of a reinforcement, we need to examine Rotter's theoretical formula for the value of a reinforcement. This is given below:

$$R.V._{a,\ s_1} = f(E_{R_a\ R_{(b-n)},\ s_1} \ \&\ R.V._{(b-n),\ s_1})$$

> The value of reinforcement a in situation 1 is a function of the expectancies that this reinforcement will lead to the subsequent reinforcements b to n in situation 1. In other words, reinforcements do not occur entirely independently of one another and the occurrence of one reinforcement may have expected consequences for future reinforcements. This expectancy is referred to as E_2 and it too may be tied to a particular situation (Rotter, 1955, p. 256).

Besides Rotter's (1954) basic equation in his Social Learning Theory, other approaches which relate to the analysis of behavior in a choice situation where a decision is made between alternatives having different subjective probabilities (expectancy) include: a) Lewin, Dembo, Festinger and Sears (1944); in analysis of level of aspiration behavior; b) Tolman's (1955) discussion of the principles of performance; c) Edward's (1954b, 1955) discussion of the SEU model from decision theory and d) Atkinson's (1957) risk-taking model.

> The remarkable fact about all five of these approaches is their similarity with respect to concepts employed and equations advanced (Atkinson and Feather, 1966, p. 31).

TABLE 1

CONCEPTS IN FIVE THEORETICAL STATEMENTS RELATED TO THE VARIABLES: SUBJECTIVE PROBABILITY, ATTAINMENT ATTRACTIVENESS, AND CHOICE POTENTIAL

(Atkinson and Feather, 1966, p. 36)

Theorists	Concepts	Resultant
Lewin, et al	Subjective Probability x valence	Force (weighted valence)
Tolman	Expectation, need-push, valence	Performance vector
Edwards	Subjective probability x utility	SEU
Atkinson	Expectancy x (motive x incentive value)	Resultant motivation
Rotter	Expectancy and reinforcement value	Behavior potential

In this class of similar theories of motivation, Rotter's (1954) theory forms the basic rationale or model for this study. Ideas from Atkinson (1966) lend considerable depth to the basic rationale.

Rotter indicates that the emphasis in his social learning theory ". . . is on performance, on the selection of alternative behaviors, rather than on the acquisition of responses or on early conditioning of physiological reflex behavior." (1954, pp. 80-81).

Rotter's variables of expectancy and reinforcement value are similar to two of Atkinson's variables, expectancy and incentive as situational determinants. Motive, Atkinson's third variable is conceived as,

> a disposition to strive for a certain kind of satisfaction in the attainment of a certain class of incentives. The names given motives---such as achievement, power---are really names of classes of incentives which produce essentially the same kind of experience of satisfaction: pride in accomplishment, or the sense of belonging and being warmly received by others, or the feeling of being in control and influential (Atkinson, 1958).

These satisfactions, as presented by Atkinson (1958) seem to correspond to the person-needs stressed by Rotter which he states are learned or acquired through the mediation of other persons--basically in social situations. The behavior potential, then, is a function of the situation.

Concerning achievement motivation, Atkinson states:

> that given a constrained achievement situation in which the subjects have a higher avoidance tendency than achievement motive, one must produce a task in which the subjects have a high probability of success and a very low probability of failure (Atkinson, 1964, p. 241).

McClelland (1961) and Atkinson (1964) have theorized that the above condition holds true for people in general who have a higher avoidance tendency than achievement tendency.

Supported by McClelland (1961) and Atkinson's (1964) ideas, Irwin Katz (1967) theorized what he conceives are two determinants of need for achievement in black males. These two determinants (standard-setting and affect-mediating self-evaluation) of need for achievement in academic pursuits were derived from the definition of need for achievement (Atkinson, 1964) who states that,

> the need to achieve (ach) is an acquired, relatively stable, and general feature of the personality that impels individuals to strive for success whenever their performance at a task can be evaluated against a standard of excellence (Atkinson, 1964, p. 241).

Katz (1967 states that what Atkinson (1964) has alluded to as

> "a capacity for taking pride in achievement" can be regarded as a socially-learned mechanism whereby (a) the individual reinforces his own achievement efforts through affect-mediating self-evaluation,based upon,(b) comparison of his performance with autonomous standards of excellence.
>
> Presumably, (a) and (b) are internalized behaviors, acquired through experiences of social reinforcements and exposure to appropriate models,that enable a person to maintain certain activities--such as homework--(or tutoring)--in the absence of surveillance and immediate extrinsic reward (Katz, 1967, p. 147).

Consequently, Katz (1967) speculates that the core processes underlying the will to perform well in the classroom and elsewhere are *standard-setting* and *affect-mediating self-evaluation*. *Standard-setting* can be defined as the levels of achievement to which one strives; *affect-mediating self-evaluation* refers to a capacity of the individual to derive satisfaction from his achievements while making a judgment about himself.

Katz (1967), having designed an experiment for measuring these constructs, found that for low achieving black males, the low achievers had low affect-mediation or few internal mechanisms whereby they could obtain satisfaction from their work and achievements. Low achievers relative to high achievers reported lower self-evaluation; and low male achievers were found to have higher standard-setting than their higher achieving peers.

Eiszler (1969), in his research based on the rationale of Katz (1967), also found similar results. High achieving boys self-administered more positive self-evaluations and fewer negative self-evaluations than low achieving males during the performance of cognitive tasks. In standard-setting, Eiszler (1969) found that low achieving boys (as well as girls) set standards which are higher than their actual performance, --averaged over eight trials of cognitive tasks. Going one step further, he found that both high and low achieving boys decrease their standards after trials of increasing difficulty. Eiszler's (1969) research suggests support for

> A theory of academic motivation which may be related on one hand to educational practices and techniques and on the other hand to the persistence and quality of achievement behavior in the absence of external reward or reinforcement (1969, p. iv).

Kamii (1965) and Hess et al (1965), in their research, address themselves to the problem of expectancy. In child rearing practices lower class black parents in general have little social interest in the academic work of their children and offer little guidance toward success in that work. These child-rearing characteristics are combined with excessive punitiveness used by parents. Black parents of lower socioeconomic background also tend to set excessive unreachable goals for their children without giving them the mechanisms or behavior whereby they can achieve these goals (Katz, 1967). However, Bell (1965) and Keller (1964) indicate that lower class black parents do indeed have educational aspirations for their children, but these goals are widely discrepant from the amount of effort the parents actually devote to their children's educational needs.

Katz (1967) seems to assume that the level of aspiration of the parents is communicated to the child in the form of expectations which he is expected to fulfill. Thus, the child internalizes an unrealistic and generalized standard of behavior.

Reinforcement, therefore, becomes a critical factor. Research done by Douvan (1956) and extended by Zigler and Kanzer (1962) suggests that there exists a hierarchy of desired rewards for students, with material rewards at one end of the scale, extending finally to the internalized reward of the satisfaction derived from the feeling of having accomplished a "well-done" job. Katz (1967), postulates that male black underachievers are functioning at the earliest primary reinforcing level. Eiszler (1969) suggests otherwise, when he gives support for a theory of academic achievement which may be related ". . . to the persistence and quality of achievement behavior in the absence of external reward or reinforcement" (1969, p. iv).

For purposes of this study, based on Rotter's rationale, with supporting and/or extended ideas from Atkinson, Katz, and Eiszler, this investigator, acting to some extent as an adult model, set consistent, realistic goals, was less punitive than lower-class black parents, took keen interest in the goals of the tutors and the goals which they set for their tutees, and encouraged a"helper-pal" academic setting in tutor-tutee relationships, rather than the traditional structured remedial setting for underachievers in reading. The psychological situation, then, was such that the tutor, as well as the tutee, had a high probability of success and a low probability of failure. Reinforcement of whatever necessary type was administered so that both primary and secondary reinforcement were given.

Given a psychological situation, in this study--tutoring--in which the above characteristics prevailed with adequate and effective reinforcement or external reward provided, the following hypotheses were developed:

Hypotheses

Hypothesis One

Younger (primary-grade) underachieving black males who are tutored by older (intermediate-grade) under-achieving black males will show greater increase in reading achievement than younger underachieving black males who have remained in the classroom situation.

This hypothesis is derived directly from Rotter's Social Learning Theory. The perceived potential behavior consists of reading achievement. This behavior was to be achieved as a function of the tutor-tutee relationship or psychological situation. Anticipated outcomes were that the students would achieve this behavior in order to obtain rewards or reinforcements of one kind or another for the particular appropriate behavior. Given an adult model, together with expectancy of success and reinforcement provided (expectancy is independent of the value or importance of the reinforcement), reading achievement would be attained.

Hypothesis Two

Underachieving black males will improve more in reading achievement through tutoring and accepting responsibility for younger pupils than underachieving black males who remained in the classroom situation.

The situational determinants of Rotter's theory (expectancy and reinforcement value) also prevail in this hypothesis. The psychological situation (in this study, tutoring-leadership) was provided. The perceived potential behavior in this hypothesis is reading achievement. The social setting is paramount.

Hypothesis Three

For underachieving black males who tutored and accepted responsibility for younger underachieving black males, their average self-established standard over a series of cognitive tasks will be lower and more realistic than their peer group of underachieving black males who have not tutored younger underachieving black males.

Given a situation (tutoring) or the tutor-tutee relationship, in which both the tutor and tutee are underachievers in reading, the investigator used Rotter's rationale as the springboard to hypothesize that the perceived potential behavior of the tutors in this situation would be setting more realistic standards for themselves (standard-setting). The construct of standard-setting is derived from Katz' (1967) rationale, and the hypothesis was formulated from ideas from Katz' (1967) and Eiszler's research in this specific area.

Hypothesis Four

Underachieving black males who tutored and accepted responsibility for younger black males would take less time to administer self-evaluations during the performance of cognitive tasks than their peer group of underachieving black males who have not had the tutoring-leadership experience with younger underachieving black males.

The formulation of this hypothesis developed from the fact that if the student tutors set more realistic standards, with this increased confidence in reaching a goal, these same student-tutors would be able to determine and administer self-evaluations on the cognitive tasks more quickly than a matched peer who continued to set high unrealistic standards.

Hypothesis Five

Underachieving black males who have tutored and accepted responsibility for younger underachieving black males will more frequently administer positive self-evaluations during the performance of a series of cognitive tasks than their peer group of underachieving black males who have not had the tutoring-leadership experience with younger underachieving black males.

With more realistic standards set, the investigator speculated that the tutor would be able to evaluate himself and his work in a more positive direction than a matched peer who had not participated in the tutoring-leadership experience.

Summary

In this chapter a theoretical rationale based on Rotter's (1954) Social Learning Theory was presented as the basis for this investigation. The basic formula for behavior employing the three constructs, behavior potential, expectancy, and reinforcement value was discussed. Other theoretical statements were briefly described to note high similarity with respect to these concepts employed and the equations advanced by other theorists of motivation. Atkinson's rationale lent itself favorably to the basic rationale for this study. Supported by these concepts, several researchers, including Katz (1967), Eiszler (1969) and the investigator of this study pursued, in different settings, two determinants of need for achievement (standard-setting and affect-mediating self-evaluation) in black males. A tutor-tutee relationship was projected as the psychological situation. In this situation the constructs of expectancy of success and built-in reinforcement value, operating simultaneously, were to bring about the potential behavior, namely, reading achievement, setting more realistic standards (standard-setting) and attaining an internal self-satisfaction for accomplished task (affect-mediating self-evaluation). From this rationale, five hypotheses were formulated for this study.

CHAPTER FOUR

RESEARCH DESIGN AND PROCEDURE

This chapter includes three sections--a description of the sample of pupils used in the study, a description of the instruments used, and an account of procedures used to collect data.

The Sample

In Fall, 1969, a total population of 1244 third, fourth, fifth and sixth grade pupils from forty-nine classrooms of six large inner-city elementary schools located in the school system of a midwestern metropolitan area were screened in reading achievement in this study. Of this original number (1244), six hundred-seven were females, screened for the purpose of complete class records, convenience of the testing situation, and for the psychological aspect of a "normal" male-female classroom atmosphere. However, since the subjects of the study were black male Americans, males of other races were eliminated from further consideration, as well as all females screened.

Three hundred sixty-three or 57 per cent of the male population screened were children of a single minority group background--Black Americans. In addition, these particular students tended to be of lower socioeconomic status. Approximately three-fourths of this group were also underachieving in reading.

Selection of Tutees

The "tutee"-subjects were forty-one students and their matched controls from the third grade classroom of six schools on E. S. E. A. Title 1 in an inner city midwestern school district. Potential tutees were selected on the basis of the Harris (1961) expectancy formula. Any student who was eight years old, or older, in the third grade, and whose reading achievement in comprehension was six months or more below grade level qualified as a potential tutee. These potential tutees were then matched with one another on the variables of non-verbal IQ, their standard scores in reading comprehension, chronological age, socioeconomic status, the same school, same grade, and same teacher. Two variables remained constant with the tutees and controls. These variables were race and sex. Random selection of the tutee and the matched control was then made. The following figures illustrate the tutees and their controls on the variables of non-verbal IQ, chronological age, standard score in reading comprehension, grade equivalent score in reading comprehension achievement, and socioeconomic status.

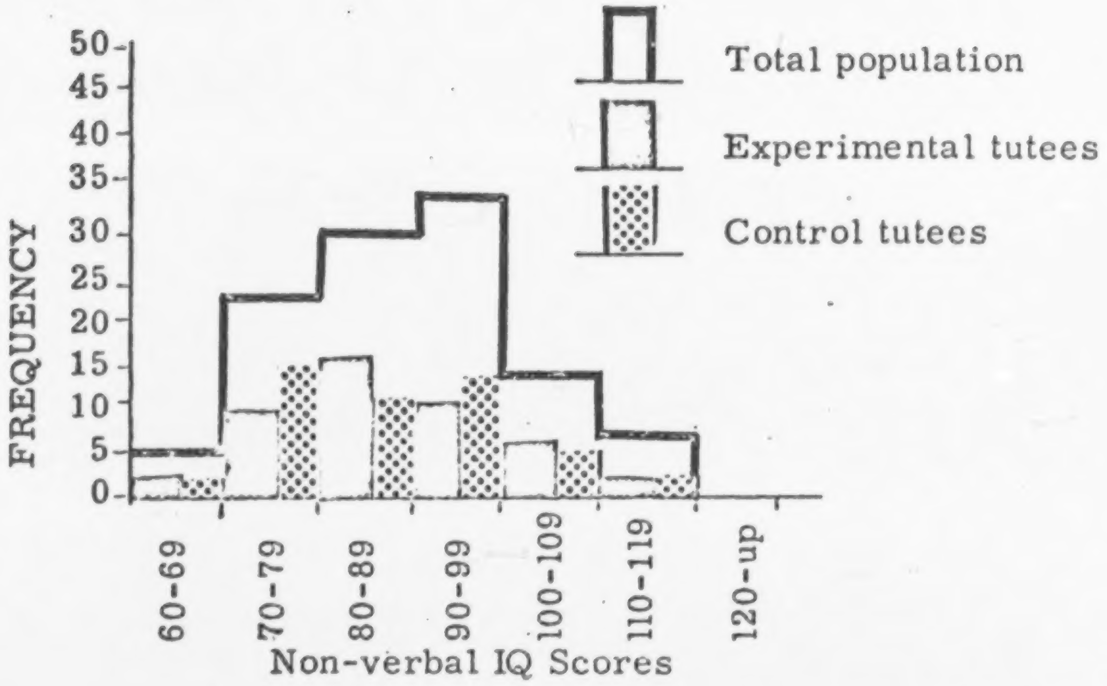

Fig. 1. Frequency Distribution of Non-Verbal IQ Scores of Total Population, Experimental Tutees and Controls.

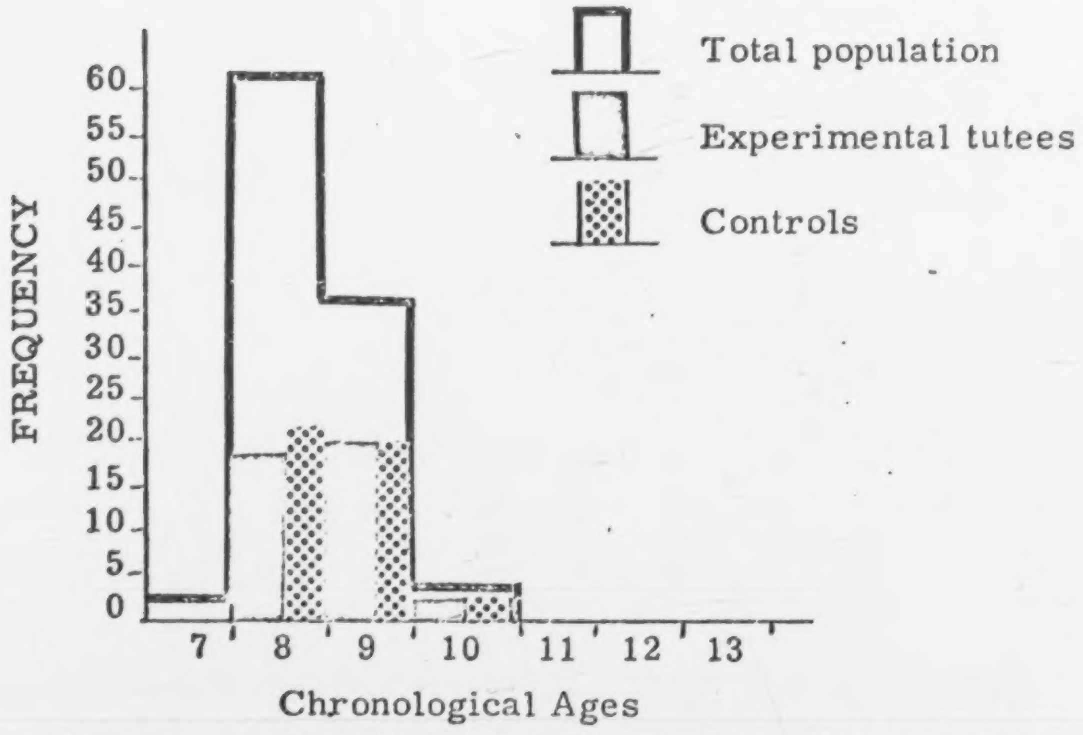

Fig. 2. Frequency Distribution of Chronological Age of Total Population, Experimental Tutees and Controls.

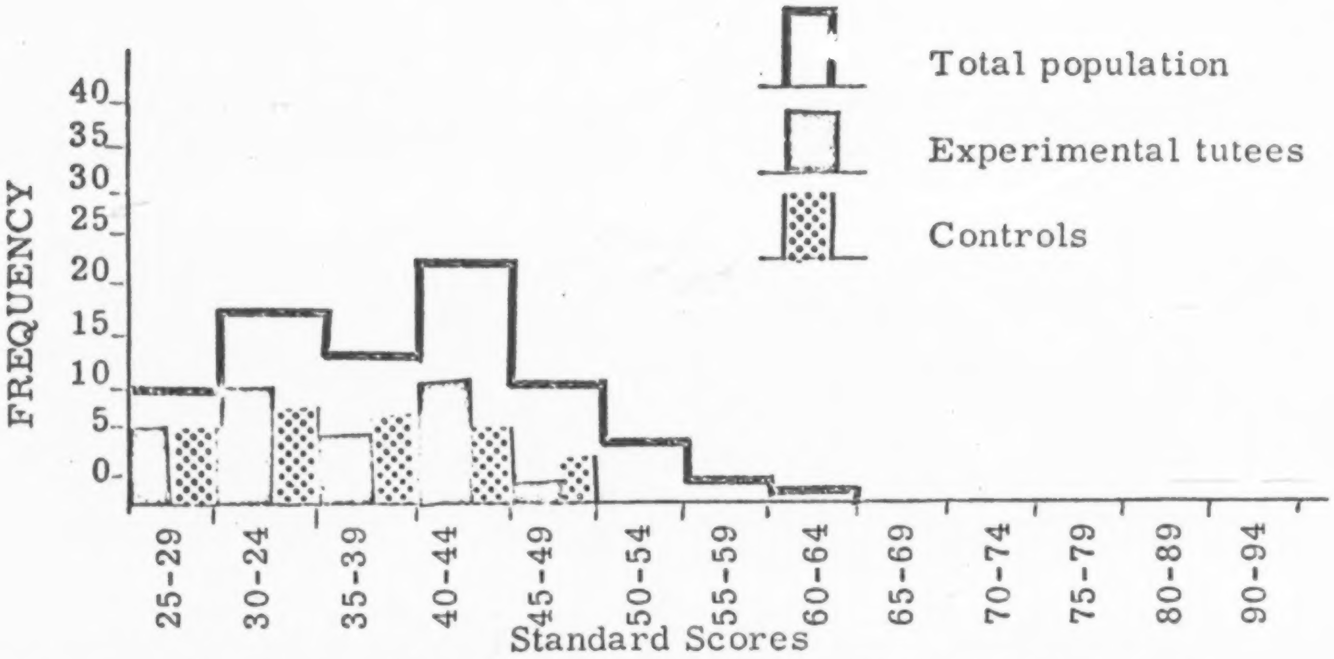

Fig. 3. Frequency Distribution of Pre-Test Standard Scores in Reading Comprehension of Total Population, Experimental Tutees and Controls.

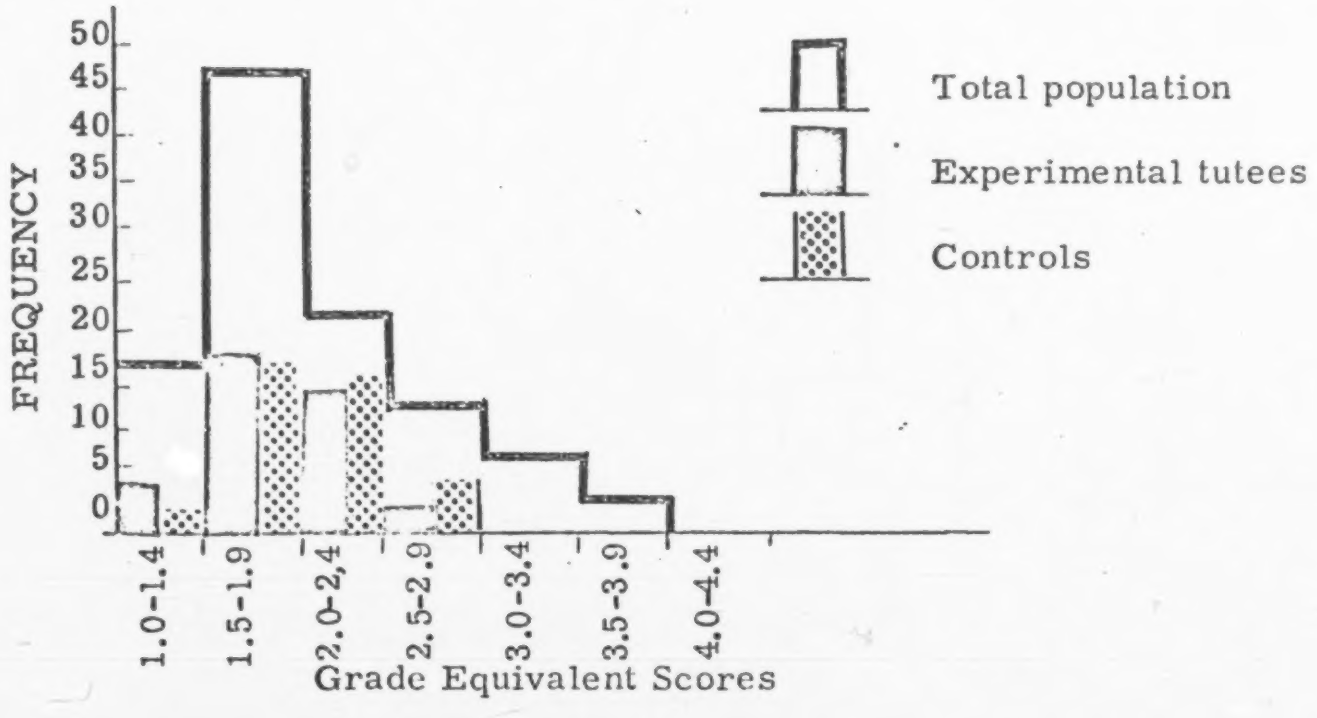

Fig. 4. Frequency Distribution of Pre-test Grade Equivalent Scores Reading Comprehension of Total Population, Experimental Tutees and Controls.

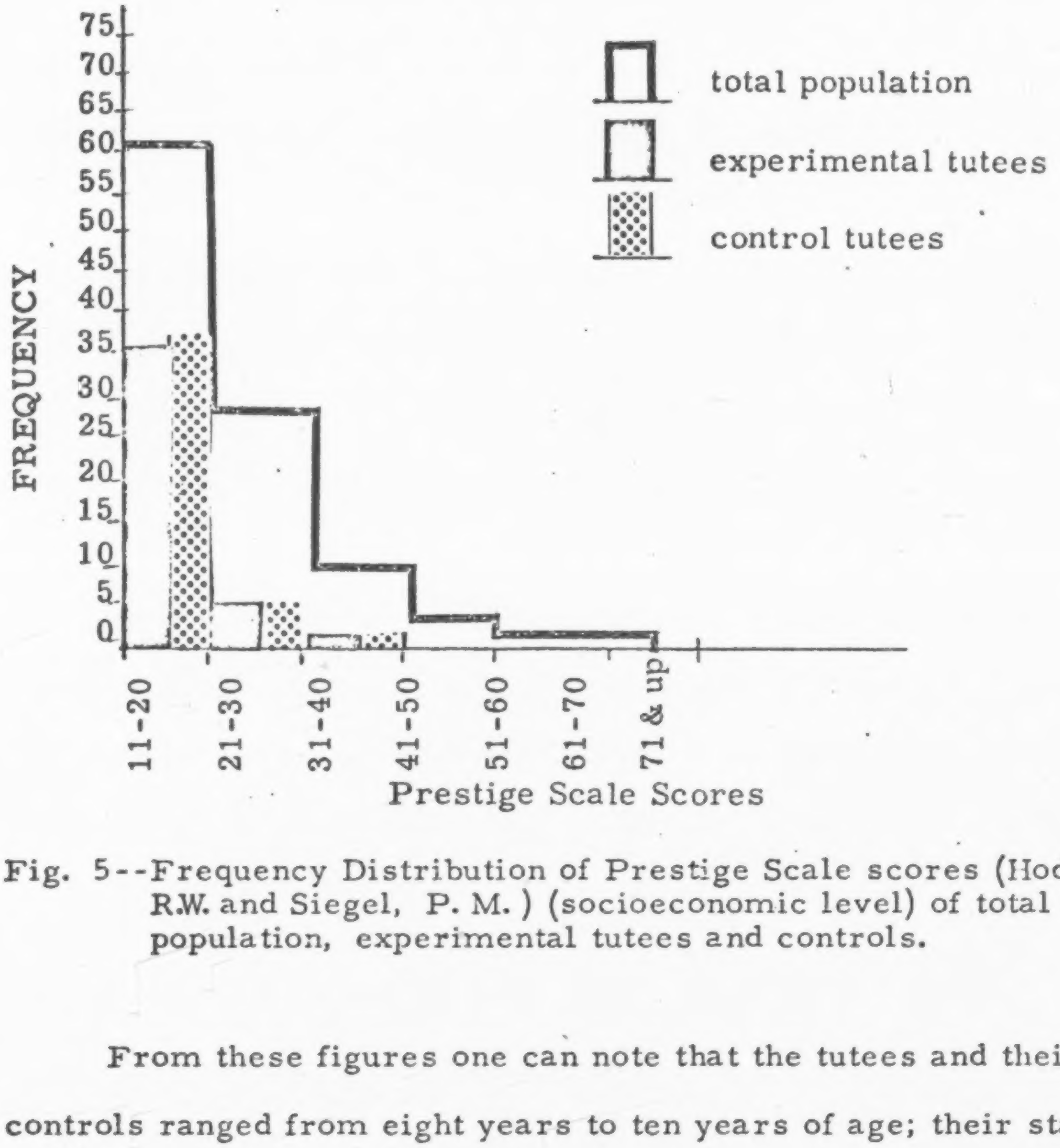

Fig. 5--Frequency Distribution of Prestige Scale scores (Hodge, R.W. and Siegel, P. M.) (socioeconomic level) of total population, experimental tutees and controls.

From these figures one can note that the tutees and their controls ranged from eight years to ten years of age; their standard scores in reading comprehension were all below average (50); grade equivalent scores in reading comprehension had a range of 1.0 to 2.9; and the prestige scale scores show the socioeconomic status to be at the lower end of the scale.

Selection of Tutors

The "tutor" subjects were forty-one students and their matched controls who came from the fourth, fifth, and sixth grade classrooms of the same six schools from which the "tutee" subjects and their controls were drawn. Potential tutors were selected on the basis of the largest negative discrepancy between grade level standard scores in reading comprehension in relation to non-verbal mental ability. These potential tutors were then matched with one another on the variables of non-verbal IQ, reading achievement, chronological age, socioeconomic status, same school, same grade, and same teacher. Two variables remained constant, namely, race and sex. Random selection of the tutor and the control was then made. The following figures illustrate the tutors and their controls on these specific variables as listed above.

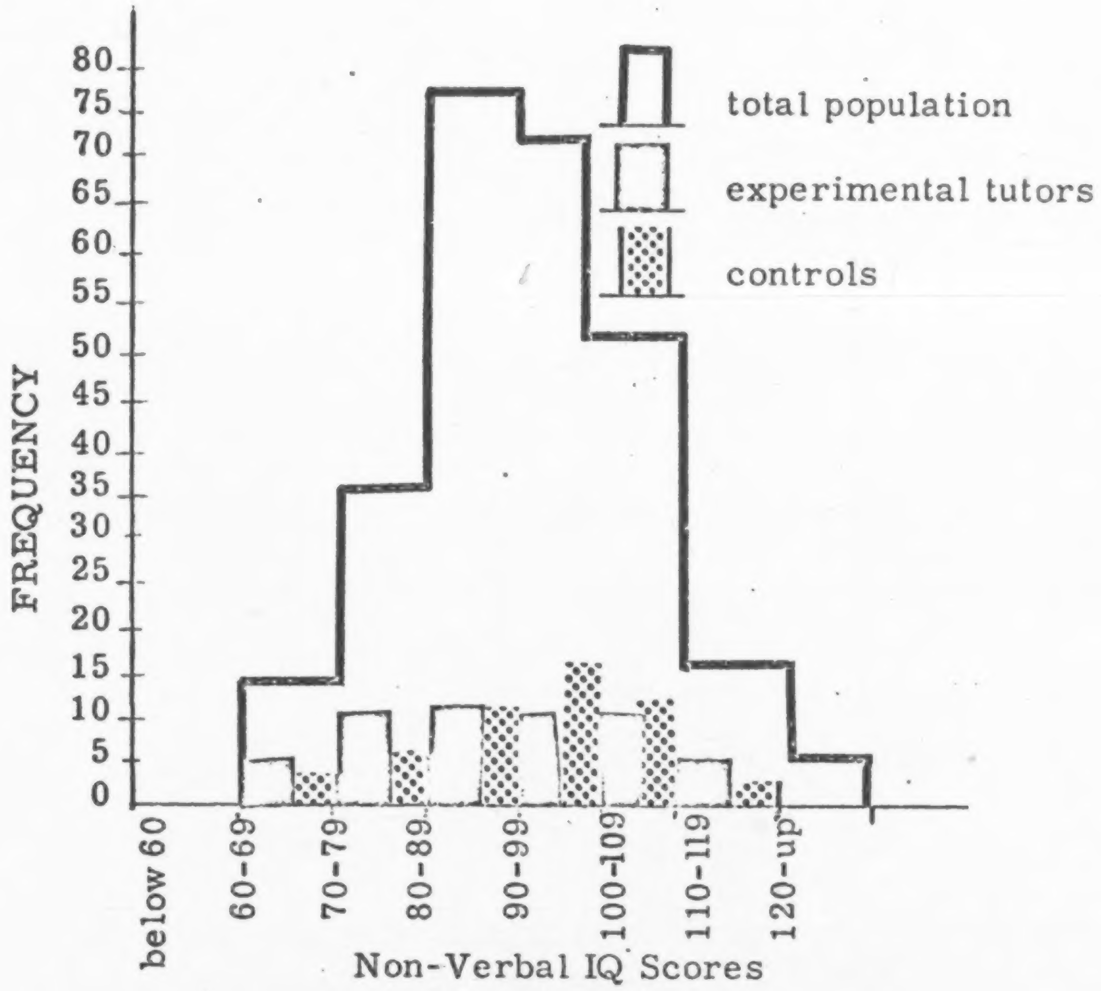

Fig. 6. Frequency Distribution of Non-verbal IQ Scores of Total Population, Experimental Tutors, and Controls.

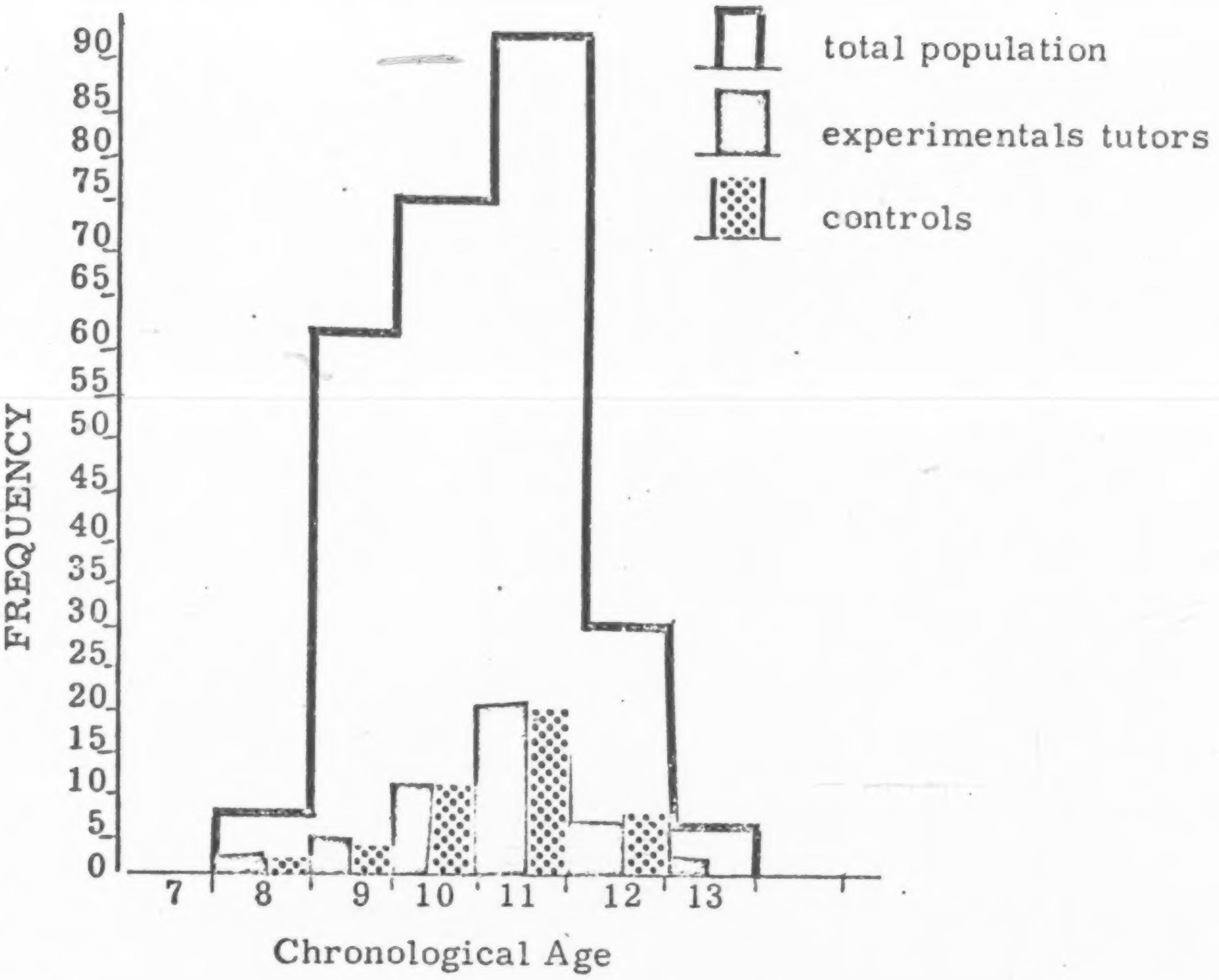

Fig. 7. Frequency Distribution of Chronological Age of Total Population,Experimental Tutors and Controls.

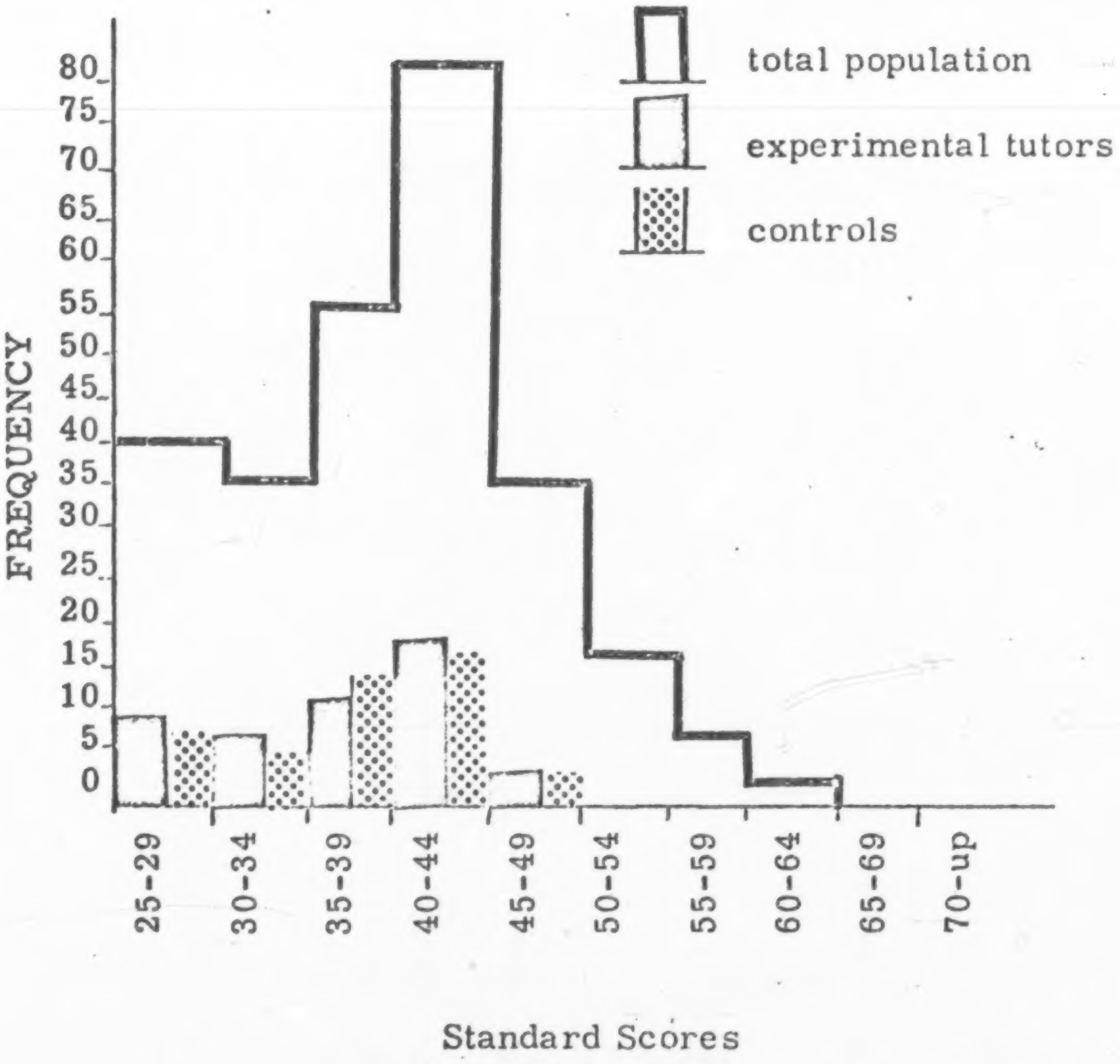

Fig. 8. Frequency Distribution of Pre-test Standard Scores in Reading Comprehension of Total Population, Experimental Tutors and Controls.

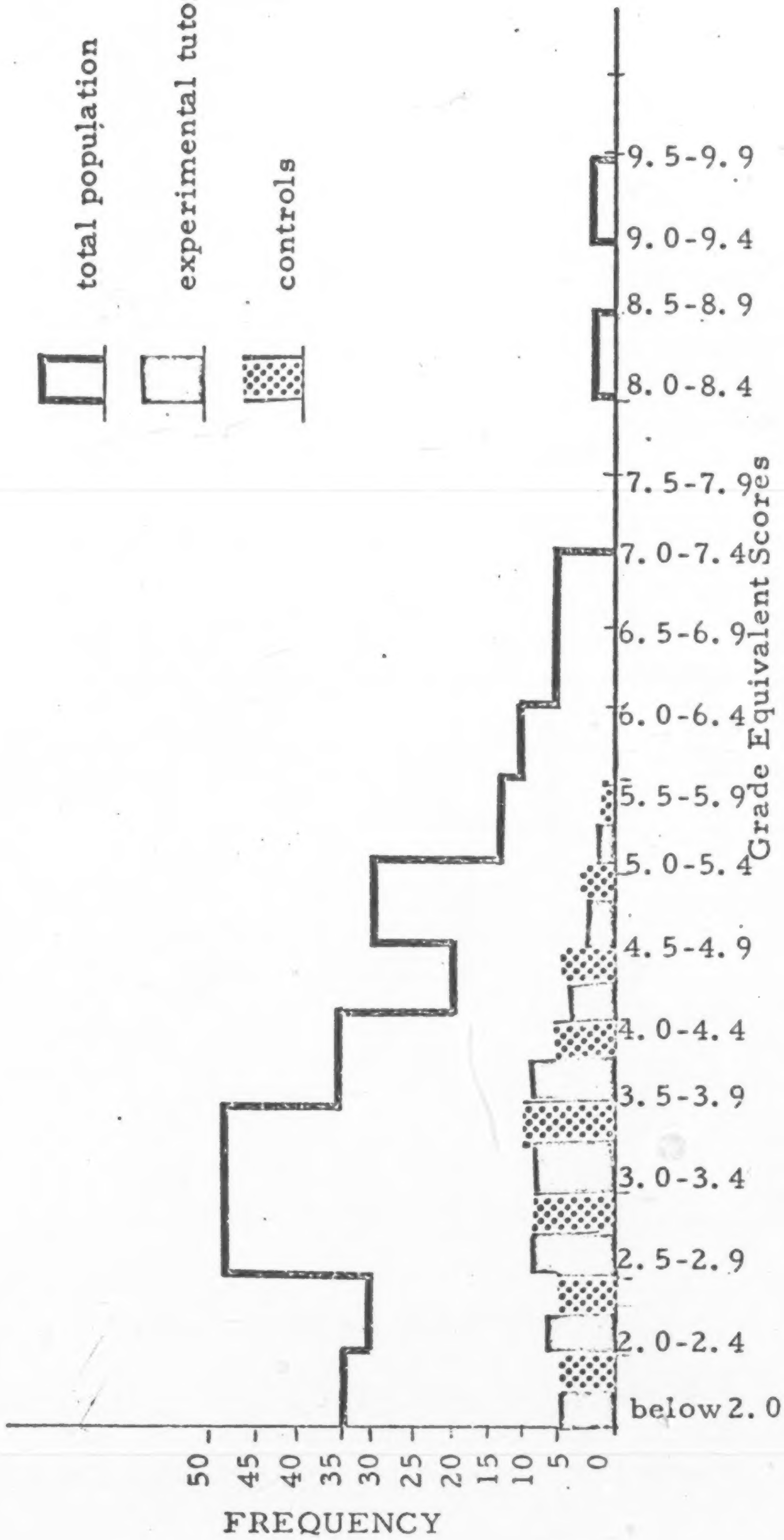

Fig. 9. Frequency Distribution of Pre-test Grade Equivalent Scores of Total Population, Experimental Tutors and Controls.

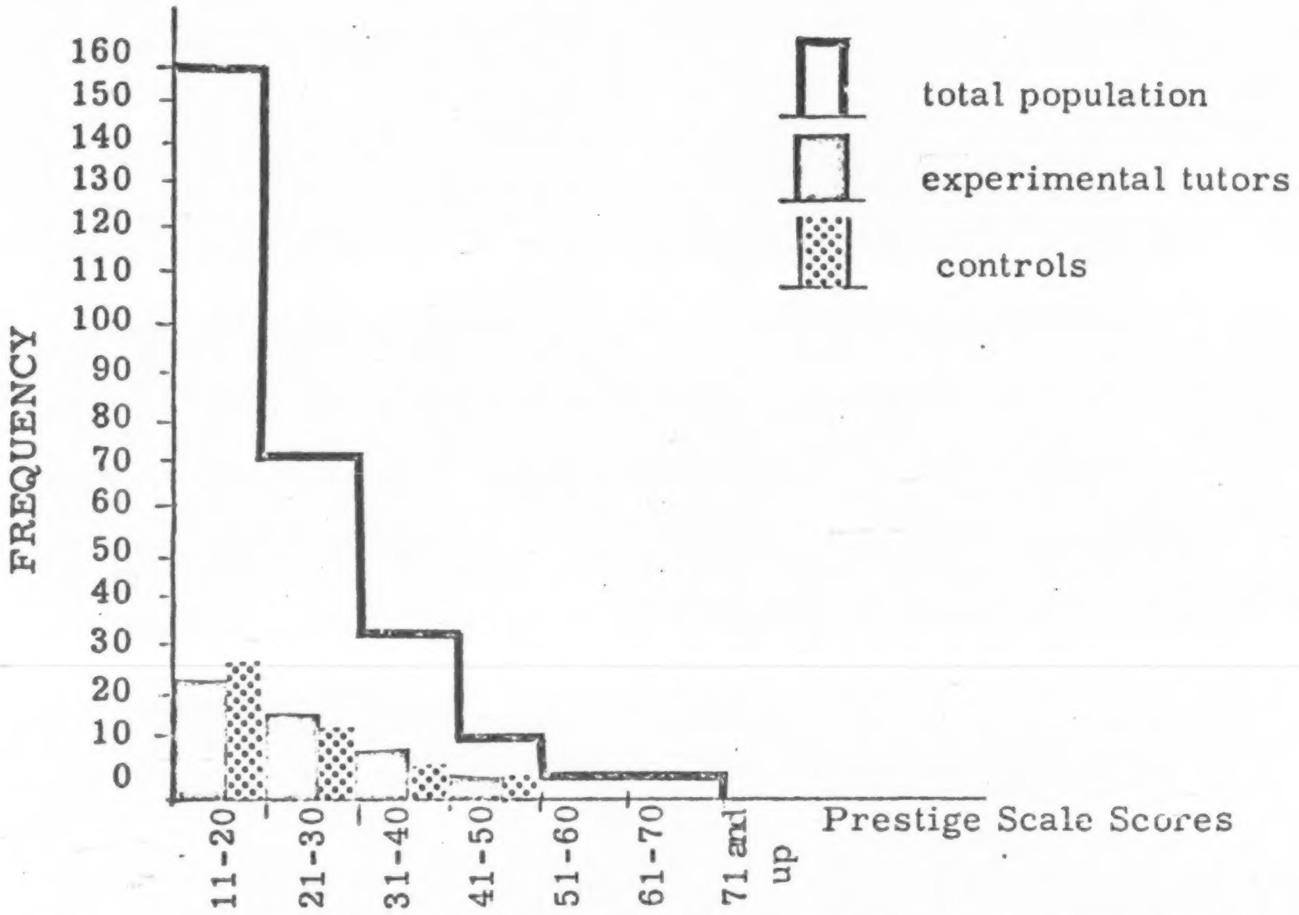

Fig. 10. Frequency Distribution of Prestige Scale Scores (socioeconomic Status) of Total Population, Experimental Tutors and Controls.

From these figures one can note that the tutors and their controls range in non-verbal IQ scores from 63 to 117; their chronological ages extended from eight years to thirteen years; their standard scores in reading comprehension were all below average (50); grade equivalent scores in reading had a range of first grade to beginning fifth grade achievement (below 2. 0 to 5. 0); and the socioeconomic status index was at the lower end of the scale.

Data Gathering Instruments

The following tests and measuring instruments were used in this study.

1. For the tutees and their controls:

   a) Gates-MacGinitie Reading Test, Primary C, Form 1, was administered as pre-test to all the third grade students. Only the randomly selected tutees and their matched controls were post tested with this same instrument.

   b) Lorge-Thorndike Intelligence Test, Non-Verbal Battery, (1964, Multi-Level Edition, Level A) which was standardized on a similar and even larger population sample than the Gates-MacGinitie Reading Tests was administered to the third grade population.

   c) School records were used to determine chronological age, name of the student, number of years in school, and the occupation of the father or head of the family.

   d) The Prestige Scale, (Prestige and the Theory of Occupational Stratification by R. W. Hodge and P. M. Siegel) was used to determine the socioeconomic status of the family from which the tutee and his matched control came.

2. For the tutors and their controls:

   a) Gates-MacGinitie Reading Test, Survey D, Form 1, was administered as the pre-test to the fourth, fifth, and sixth grade student populations. This same test was also administered as post-test to the randomly selected tutors and their controls.

b) Lorge-Thorndike Intelligence Test, Non-Verbal Battery (1964 Multi-Level Edition), which was standardized on a similar and even larger population sample than the Gates-MacGinitie Reading Tests was administered to the fourth, fifth and sixth grade populations. (Level B, Grade 4; Level C, Grade 5; Level D, Grade 6).

c) School records were used to determine chronological age, name of student, number of years in school, and occupation of father or head of the family.

d) The Prestige Scale (Prestige and the Theory of Occupational Stratification by R. W. Hodge and Paul M. Siegel) was used to determine the socioeconomic status of the family from which the tutor and his matched control came.

e) Section III of the Cleveland Student Questionnaire was used to decide whether two determinants, (standard-setting and affect-mediating self-evaluation) for academic achievement as operationalized by Katz (1967) and further researched by others (Eiszler, 1969; Mahan, 1970) changed as a result of the tutoring-leadership experience. This instrument was used for both pre-and post testing.

Validity of the Gates-MacGinitie Reading Test.

The Gates-MacGinitie Reading Test meets the criterion of validity quite satisfactorily, For example, the comprehension subtest is made up of highly selected items of increasing difficulty in the progression of passages, which "on the face of it" seem to measure the student's ability to understand the content of the printed passages.

In the selection of the items,

> each item was tried out by approximately 800 pupils in each of the grade levels, for which the item was intended, and also by approximately 750 pupils at adjacent grade levels.
>
> The pupil's responses to each of the items were tabulated and difficulty and discrimination indices were computed for each item within each grade. Both the difficulty indices (which were based on all pupils in a particular grade) and the discrimination indices (which were based on the upper and lower 27% of the pupils in a grade were corrected for chance success (Technical Manual, p. 2).

Because of the recency of this test, little has been reported on the criterion validity; however, in the standardization of the test, correlations between the Gates-MacGinitie Reading subtest scores (Vocabulary, Comprehension) and the Lorge-Thorndike Verbal IQ (1964, Multi-Level Edition) are, in general, quite high. Correlations ranging from .60 through .85 with the large majority of correlations at .74 and better are given in the manual.

Reliability of the Gates-MacGinitie Reading Test

A reliability coefficient is an index of the accuracy of the score obtained on a test. In general, the reliability coefficients obtained from the Gates-MacGinitie Reading Test (as reported in the Technical Manual, Table 3, p. 8) are reasonably high. The alternate forms' reliability coefficient which takes into account variations in a pupil's performance from one day to another and variations in the content of the test from one form to another range between .67 through .87 with the vast majority at .80 and better. This is a better estimate of the reliability of a test than is the frequently-used split-half procedure which simply indicates the degree to which performance of one-half of a test duplicates the performance of the other half during the same test period. The reported majority of the split-half coefficients for the various subtests were .90 and better.

One of the important contributing factors to the very high intra-form reliabilities is the following:

> On the basis of item analysis, only the most effective items were retained for use in the final forms of the test. The alternate forms of each test were then constructed to provide an item-by-item balance in difficulty and a roughly similar distribution of content (Technical Manual, p. 2).

Validity of the Lorge-Thorndike Intelligence Test, 1964, Multi-Level Edition.

Primarily because of the recency (1965) of the tests, there are few data on the predictive and concurrent validity of this edition. Nevertheless, the authors, in their manual (p. 37) report that the Verbal battery of the Separate Level Edition (1954) of the Lorge-Thorndike Intelligence Tests correlates quite highly with three other well-known group tests of intelligence (.77, .79, .84).

Unfortunately, the names of these three group tests have not been stated by the authors. The non-verbal battery correlates somewhat lower with the same three tests (.65, .71, .74).

The authors reason that since the Multi-Level Edition, 1964 appears to have higher reliability than the original Separate Level Edition, the correlations between the Multi-Level Edition and the other, older tests of intelligence, should be at least as high as those reported for the Separate Level Edition, 1954.

In general, the Multi-Level Edition seems to have quite adequate validity in regard to face validity and construct validity. The items require a pupil to make responses which one would call "intelligent". The items were selected so that for the most part, they would deal with symbolic relationships.

In answering most of the items, the authors indicate that "a pupil is required to discover a principle and then apply it" (Manual, Lorge-Thorndike Intelligence Test, 1964, Multi-Level Edition).

Complete data on reliability of the Multi-Level Edition (1964) have not been reported as yet. However, the authors indicate that "preliminary data on equivalent-halves reliability indicate that the reliability of the 1964 edition is somewhat higher than the previous (1954) Separate Level Edition for 'comparable grades'" (Manual, p. 37).

As reported in the fifth edition of Buros' Mental Measurement Yearbook (5:350) in regard to the 1954 edition, the odd-even reliabilities are very high (.88 to .94). In addition, alternate forms correlate rather well (.76 to .90) at all levels, but the Verbal scales for levels 3, 4, and 5 yield the highest coefficients, namely: .90, .86, .86.

Validity of the Cleveland Student Questionnaire

The Cleveland Student Questionnaire was used to measure change in the testing of the two constructs, standard-setting and affect-mediating self-evaluation.

This questionnaire was developed by Dr. Charles Eiszler, who used this instrument in his recent research and dissertation (1969). Only section III of this questionnaire was used in this study as it is the only aspect relevant for this particular piece of research.

Regarding validity, the test has both construct and face validity. Katz (1967) has spent much time developing and testing the two constructs of standard-setting and affect-mediating self-evaluation with black children. Katz' two constructs evolved from the work of Atkinson and McClelland's theory of achievement motivation (1966).

In considering face validity, Section III of the Cleveland Student Questionnaire consists of a series of achievement-oriented tasks requiring the student to unscramble lists of meaningless letters to form four letter words. It is thought that these kinds of tasks are analogous to those performed by students in the regular classrooms. These kinds of tasks are assumed to receive little extrinsic reward from the teacher upon their completion. Because of these similarities, these tasks present situations for measuring different aspects considered important in academic achievement.

Reliability of the Cleveland Student Questionnaire

At present, the reliability of this test is unknown. The test is constructed as a way of measuring frequency of response. Consequently, the lower the reliability the greater the error term; which, in turn, makes it more difficult to find a significant difference, when in fact, a difference may exist. Therefore, one is biasing the results in finding no difference, statistically, when a difference may exist.

Procedure

This study was conducted during the academic school year of 1969-1970. The first phase consisted of screening or pre-testing the total population of 1244 students from grades three, four, five, and six of six inner city schools in a midwestern metropolitan school district. Pre-testing took a little over six weeks, beginning in October and ending in early December.

Tutors: (PRE-TESTING)

All fourth, fifth, and sixth grade students were given the Gates-MacGinitie Reading Test, Survey D, Form 1. The students of these same grade levels were also given the Lorge-Thorndike Intelligence Test, Non-Verbal Battery (1964, Multi-Level Edition). From these screening results, under-achieving students were identified by comparing each student's comprehension achievement standard score in reading with his non-verbal IQ score from the Lorge-Thorndike Intelligence Test. In the Gates-MacGinitie

Technical Manual, p. 11, Table 11) a critical values table was presented to locate students who fall below an expected norm. Such students were described as "underachievers".

> Table 11 gives critical values for determining whether Comprehension Test standard scores of individual pupils differ significantly from those that would be expected from their Lorge-Thorndike Intelligence scores. While Table 11 is based on the 1964 Multi-Level Edition of the Lorge-Thorndike Intelligence Tests, the table would be appropriate for any other intelligence test based on a mean of 100, a standard deviation of 16, and with similar reliability (Technical Manual, p. 5).

Besides the above predictor of "underachievement", classroom teachers confirmed the findings from the initial screening through their own observations, class records and a pattern of "underachieving" as recorded in past grades on each student's cumulative records. Having computed this for each student, the next step involved the selection of the one hundred lowest achieving black male students in reading. These one hundred students were then carefully matched or paired as closely as possible on the variables of nonverbal IQ, chronological age, reading achievement(reading comprehension standard score), socioeconomic status, same grade, same school, and same teacher. The variables of sex and race remained constant. One student from each of the pairs was then selected randomly for the experimental group and thus became a tutor. The other student became his control. Fifty matched pairs began the tutoring program. Forty-one matched pairs concluded the program. Nine pairs were eliminated in the final statistics. Six moved away from the participating schools, two were absent from school too frequently and one was maladjusted.

Section III of the Cleveland Student Questionnaire was then administered individually to all one hundred selected students, the experimentals and the controls. This instrument developed by Eiszler (1969) permitted the assessment of theorized covert self-regulatory processes -- self-evaluation, affect-mediation and standard-setting -- during the pupils' performance of a series of cognitive tasks. Tasks were composed of a discriminable number of problems such that (1) students could report some quantitative standard toward which they would strive and (2) the investigator could make a quantitative estimate of actual performance.

Within these restrictions, this series of verbal tasks allowed the student to make self-reports of the standards which he set, the kind of self-evaluation he made and the feelings he associated with his self-evaluations. The task and the procedure for eliciting self-reports is described in detail below.

The Task

A verbal task which required the student to unscramble ten four-letter words was used. The following set of scrambled four-letter words is one of the eight sets used:

dols ____________________

laoc ____________________

zeis ____________________

dere ____________________

kepe ____________________

telf ____________________

hurs ____________________

teag ____________________

laer ____________________

rwae ____________________

In the original instrument, Eiszler (1969) used all capital letters for the eight sets of ten four-letter words used. This investigator changed all capital letters to small letters because most, if not all spelling lessons and other cognitive tasks, are done at the elementary level in lower case print rather than upper case print.

Students were given the following instructions about the task:

> The purpose of this section is to find out how good you are at unscrambling letters and making words out of them. On the following pages you will find some common four-letter words which have been scrambled by changing the order of the letters. Your job is to try to make a word out of the scrambled letters and to write the word in the space to the right of the letters.
>
> Example:
>
> wtse ______west______
>
> If you find any of the words difficult to unscramble, skip them and go on to the next word. It is important to get as many as you can, and you may have time to come back to those you find difficult. There will be ten words on each page and you will have one and one-half minutes for each page. You will be instructed when to stop. Stop working and turn the page promptly when you are asked to stop. (Eiszler, 1969).

These instructions were read to the individual student by the examiner and were also printed on the booklet given to the student. The series of tasks consisted of eight sets of ten scrambled words each and the individual student was permitted one and one-half minutes to work on each set. The first six sets were made up of sixty different scrambled words. The final two sets were made up of twenty words randomly selected from among the first sixty.

Self-Reports of Standard-Setting and Self-Evaluation.

Prior to each of the eight trials described above, each student was asked to respond to the following question:

> How many words would you have to get right before you would say that you did a "good job"? ___________

No expectations or level of standard was implied by the examiner. Each student was free to set any standard and to change his standards from trial to trial.

Following each of the eight trials in the series of cognitive tasks, each student was asked to make an evaluation of his performance and to indicate his evaluation by responding to the following question:

> How well did you do? ___________________________

The student responded to the question by printing or writing or marking "Good", "Poor", or "Undecided" on the given line. Each student had a set of three cards with these words printed on them. He could use these cards while making his decision. From the time the question was read by the investigator to the second when the student put the point of the pencil down to begin to print or write the first letter of the word recording his decision, the investigator timed the student in seconds with a stop-watch. This aspect of timing in seconds involved the fourth hypothesis of this study.

The questions which elicited the student's self-reports of the standard-settting and self-evaluation were placed on pages which separated the eight sets of verbal problems. Thus,they were required to set a standard for a task without specific knowledge about the problems of the task. In this situation,however,they were able to rely on their immediately prior performance and self-evaluation on a task which they knew was similar. The eight sets of verbal problems were presented in separate sections rather than a booklet of eight sets. It was presented in this fashion so that the student could work more comfortably with three sheets of paper rather than a booklet of twenty-four pages.

Format of the 3-page Set

Page 1:	Page 2:	Page 3:
Question A:_____	The Task:	Question C:_____
Question B:_____	__________	Question D:_____
(Standard-setting)	__________	(Affect-mediating self-evaluation)
	__________	

Briefly said,three separate testing periods involved the experimental tutors and their matched controls. In the first period,the students were administered non-verbal intelligence tests. In the second,the students were administered reading achievement tests. From the results of these tests,the one hundred lowest achieving black males were selected, matched on nine variables, then randomly selected for the experimental tutor with the matched student becoming a control. Each of these students (experimental and control) was then individually administered the eight sets of cognitive tasks to determine the student's self-report of standards, the kind of self-evaluation made and the feelings he associated with his self-evaluations, together with the time in seconds which it took the individual student to determine the self-evaluation.

Tutees: (PRE-TESTING)

All third grade students at the same six schools in the same school district from which the tutors and their matched controls were screened, then given the Gates-MacGinitie Reading Test, Primary C, Form I, to determine the level of their reading comprehension achievement.

The Gates-MacGinitie Technical Manual did not give the critical values "cut off point" for identifying underachievers at the third grade level (as it did for Grades 4-9); therefore, a different method was used to identify third grade underachievers. The reading expectancy formula (used at the University of Chicago Reading Clinic [(1) CA in months x IQ; (2) Product of (1)÷12=MA; (3) Subtract five years from MA=Reading Expectancy Level] was used to determine the level at which each student was expected to be reading at the present time at the primary level in relation to the results of his non-verbal IQ test and the student's chronological age.

Having computed this for each third grade black male student, then, the one hundred lowest achieving (in reading) third grade students were selected as potential tutees. This selection was based upon the basic principles of selection for remedial and tutorial reading as outlined by Harris, who states:

> A safe rule to follow is to select cases for remedial teaching or tutoring in which reading is at least a year below the grade norm, and the difference between reading age and mental age is at least

> six months for children in the first three grades, nine months for children in grades four and five, and/or a year for children above the fifth grade. (Harris, 1961, p. 299)

These one hundred black male students were then paired as closely as possible on the same nine variables as were the tutors and their matched controls.

One student from each pair was then randomly selected as the experimental tutee. The other student became his control.

Experimental tutees were then assigned to the experimental tutors. The experimental tutor was assigned to the tutor-leadership role in such a way that his reading performance was at least six months or more ahead of the reading achievement of his assigned tutee's reading comprehension level.

Tutoring Sessions

The tutoring sessions occurred three days a week (Tuesday, Wednesday, and Thursday) for thirty minutes per day during the regular school day session. The tutoring sessions extended over a period of twelve weeks or thirty-six days (three days a week for twelve weeks); in toto, eighteen hours of tutoring-learning experiences.

The investigator met with the tutors one day a week for fifteen minutes for the purpose of acquainting the tutors with various resources at their disposal (reading materials center, bookmobile, public library, classroom materials), and also lending support and guidance to the tutors in various aspects of learning as tutors indicated need of assistance, in working out behavior problems or situations as they developed.

The tutoring sessions occurred in various locations; in fact, any available space in the participating school was used. These locations included: an unused speech therapy clinic, stage, bleachers of an auditorium, secluded hallways, gym floor, portable alcoves in a hall, and a vacated teacher's lounge. All matched controls, whether tutor-controls or tutee-controls remained in the classroom situation during the experimental tutor-tutee sessions in the above named locations.

During the thirty-minute tutoring sessions (three days a week) each tutor met with his tutee and gave instruction in reading as the tutor had previously planned. Each tutor kept a note-book of plans he hoped to carry out with "his pupil". Some tutors took books home at night to prepare the reading of them for the next day's tutoring session. At times, tutors allowed the tutees to make their own selections of games, books, filmstrips, or book-record combinations. Some tutors brought various materials (games, comic books, etc.) from home, the public library, or from their classroom. Occasionally tutees brought materials from various sources and asked the tutor to use these with them. No textbooks nor workbooks were ever used. Each tutor-tutee pair had a small rug (obtained gratis from a local carpet company) which the students spontaneously called their "teaching pad". Some tutors chose not to use the rugs; they preferred to use available desks and chairs.

Besides making tentative lesson plans, some tutors kept records (their own idea) of presence and absence or tardiness; all tutors gave rewards to their tutees; tutors gave rewards to themselves when they thought they were doing a good tutoring job. These rewards were supplied by the investigator; primary rewards included paperback books, candy, stars or seals, and commercially-produced reading incentive charts.

The investigator (a reading specialist) performed several functions: (1) organizing the research project; (2) being available at the tutoring centers for the entire period; (3) assisting the tutor and observing the tutoring; (4) conducting weekly conference sessions with the tutors; (5) helping tutors locate and properly use available materials; and (6) expressing interest, praise, and encouragement to tutors and tutees in the tutoring project.

Post-Testing

At the end of the twelve-week period of the tutoring sessions, post-tests were administered.

As part of the post-testing, Form I of the Gates-MacGinitie Reading Test, Survey D, was administered to the tutors and their controls to measure differential gains or losses in reading achievement as measured from raw scores in reading comprehension.

In addition, post-testing with the tutors and their controls included the administration of Section III of the Cleveland Student Questionnaire to obtain change-scores on the determinants, standard-setting and affect-mediating self-evaluation.

Tutees and their controls were administered the Gates-MacGinitie Reading Test, Primary C, Form I, as a post-testing measure to determine their differential gains or losses in reading achievement as measured from raw scores in reading comprehension. This was the only post-testing aspect in relation to the tutees.

Summary

In this chapter, the sample of third, fourth, fifth, and sixth graders were described, followed by a description of the data gathering instruments. The procedure of the investigation was delineated. A paper-and-pencil, test-like procedure which permitted the assessment of standard-setting and affect-mediating self-evaluation on a series of cognitive tasks was also explained. A brief description of the tutoring sessions was included.

In the next chapter, the hypotheses will be stated operationally, together with operational definitions of concepts along with analysis of the data.

CHAPTER FIVE

ANALYSIS OF DATA

This chapter will present an analysis of the data and the results of that analysis in separate sections. In the first section, the concern is with describing the analysis of data relevant to each of the five hypotheses. The hypothesized treatment effects are considered in the following order: (1) changes in the reading achievement of tutees; (2) changes in the reading achievement of tutors; (3) differences in standard-setting behavior; (4) differences in affect mediated by task-specific self-evaluation; (5) differences in the quality of task-specific self-evaluation.

To insure that the concepts used in each hypothesis are understood, terms are operationally defined and, where necessary, discussed in conjunction with the statement of the hypothesis and prior to the reporting of the results. The second section will interpret the reported results. The chapter will conclude with a brief summary.

Results

Hypothesis One

Hypothesis One is concerned with the question of whether younger (primary grade) underachieving black males can make significant gains in reading achievement if and when they are tutored by older (intermediate-grade) underachieving black males who assume a tutoring-leadership role.

Stated operationally it reads:

The mean reading achievement change score of underachieving tutees will be significantly greater than will be the mean reading achievement change score for the control pupils.

The first term in need of clarification is the concept of "underachievement."

Thorndike defines "underachievement" as: ". . . a discrepancy of actual achievement from the predicted value, predicted upon the basis of the regression equation between aptitude and achievement"(1963, p. 13).

The Gates-MacGinitie Reading Technical Manual reports "critical values" for determining whether comprehension reading scores of individual pupils (grades 4-9) differs significantly from those that would be expected on the basis of their non-verbal aptitude scores. For example, for an IQ score of 100, a student in grade four should have a reading comprehension standard score between 42-56. Fourth grade students (with IQ=100) falling into a reading comprehension standard score range below 42 are identified as underachievers.

Tutees are the randomly assigned black male third grade underachieving students who were instructed in reading by an intermediate grade level black male tutor.

Controls are those randomly assigned black male underachieving students who were paired with a tutee or tutor on the basis of the variables of non-verbal IQ, chronological age, socio-economic status, reading achievement standard scores in reading comprehension, same school, same teacher, and same grade. Sex and race were constant variables.

The reading achievement change score is the difference between pre-test reading achievement raw score and post-test reading achievement raw score. Fig. 11 illustrates the distribution of these change scores for tutees and their controls.

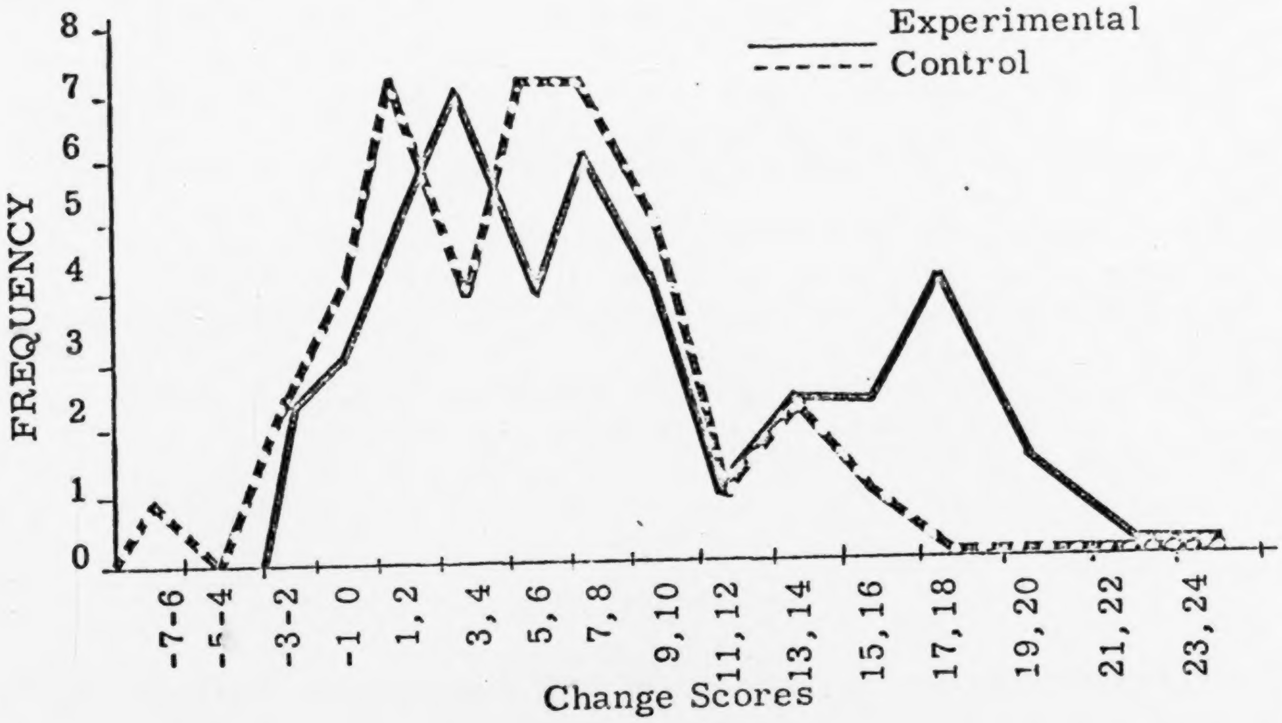

Fig. 11. Distribution of Change Scores in Reading Comprehension for Experimental Tutees and Controls.

A student's t-test was performed on the reading achievement change scores. The mean and variance for each group (tutees and controls) and the t-value resulting from the analysis are reported in Table 2.

TABLE 2

MEANS AND VARIANCES OF CHANGE SCORES IN READING COMPREHENSION ACHIEVEMENT OF EXPERIMENTAL TUTEES AND CONTROLS

Groups		Change Scores Mean	Change Scores Standard Deviation	t	P
Experimental	(n=41)	7.0975	6.20	1.76	<.05*
Control	(n=41)	4.9512	4.76		

*One-tailed.

The t-test comparing the experimental mean (7.0975) with the control mean (4.9512) yielded a value of 1.76; a value of 1.67 is significant at the five percent level of confidence.

The significant t-value lends support to Hypothesis One that tutees have higher reading achievement comprehension change scores than do their controls.

Hypothesis Two

Hypothesis Two is concerned with the question: Will older underachieving black males make significant gains in reading achievement when they assume a tutoring-leadership role with younger pupils?

The operational hypothesis is thus stated:

The mean reading achievement change score of underahieving black male tutors will be significantly greater than will be the mean reading achievement change score for their controls.

The concept tutors refers to those randomly assigned fourth, fifth, and sixth grade underachievers who instructed younger underachieving primary grade pupils in the area of reading.

Figure 12 illustrates the distribution of the change scores in reading for tutors and their controls.

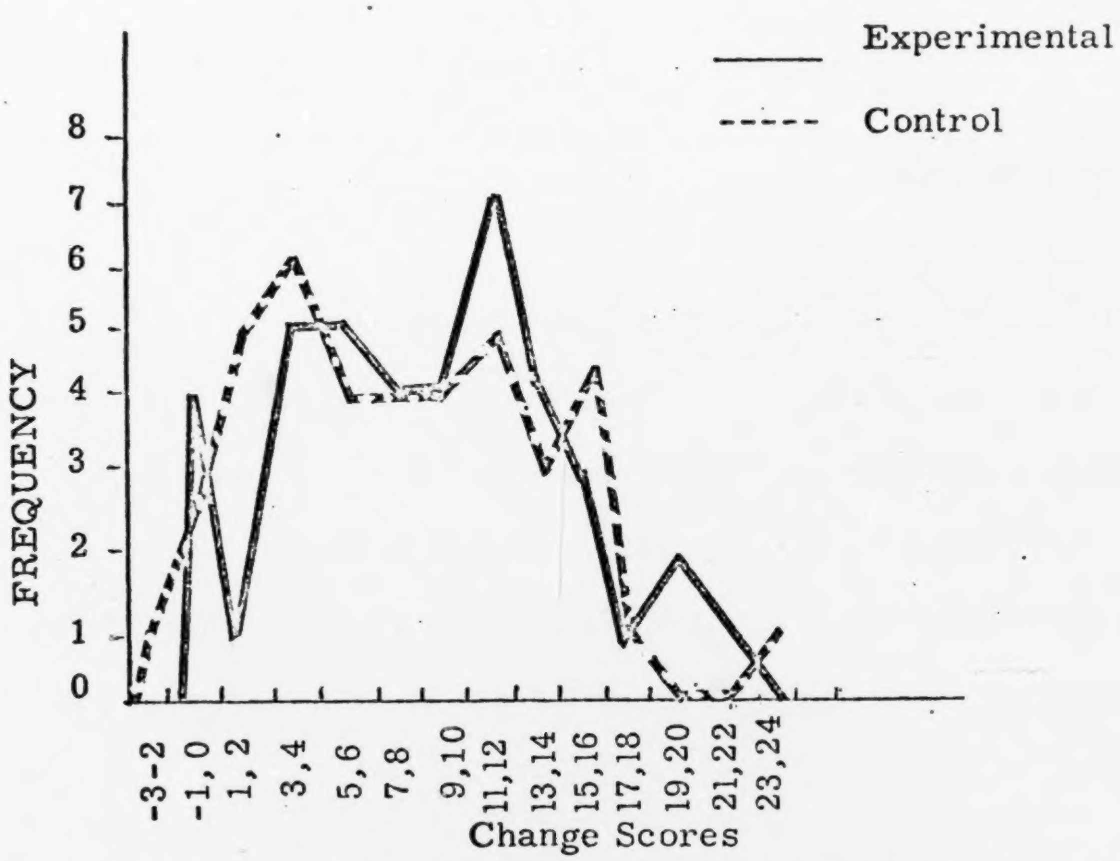

Fig. 12. Distribution of change scores in reading comprehension for tutors and controls.

A students' t-test was performed on the reading achievement change scores. The mean and variance for each group (tutors and their controls) and the t-value resulting from the analysis are reported in Table 3.

TABLE 3

MEANS AND VARIANCES OF CHANGE SCORES IN READING COMPREHENSION ACHIEVEMENT OF EXPERIMENTAL TUTORS AND CONTROLS

Groups		Change Scores			
		Mean	Standard Deviation	t	P
Experimental	(n=41)	9. 1219	5. 9538	1. 41	<. 07*
Control	(n=41)	7. 5853	5. 7497		

*one-tailed.

The t-test comparing the experimental mean (9. 1219) with the control mean (7. 5853) yielded a value of 1. 41; the critical value at the five percent level of confidence is 1. 67. The obtained t-value would occur by chance only seven times in 100. However, in the context of the present study, the result does not allow for rejection of the null hypothesis associated with hypothesis two of the study.

Hypothesis Three

Hypothesis Three is concerned with the question of whether underachieving tutors will set more realistic and attainable standards than control groups who do not have the tutoring experience. Stated operationally, the third hypothesis reads: *The mean standard-set congruent score of underachieving tutors will be significantly lower than will be the mean standard-set congruent score for the controls.*

The standard-set congruent score refers to the difference between the individual student's self established standard for a trial on the cognitive task and his actual performance on that trial. The self-established standard is the student's response to the question, "How many words would you have to get right before you would say you did a good job?" Actual performance is the number of word problems solved by the student in each trial. The smaller the difference between the two responses the more congruent the scores. Table 4 presents the mean standard-set congruence scores for experimentals and controls on each of 8 trials of the cognitive task.

TABLE 4

MEAN STANDARD-SET CONGRUENT SCORES FOR EXPERIMENTAL AND CONTROL TUTORS ON EACH OF EIGHT TRIALS OF COGNITIVE TASKS

Group	Mean								
	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Total
E	5.44	4.48	5.20	4.51	3.02	4.54	3.70	3.90	4.35
C	6.42	5.06	6.83	4.93	4.34	5.43	5.40	4.99	5.42
Total	5.93	4.77	6.01	4.72	3.68	4.98	4.55	4.45	

The analyses of trends performed on the data as described by Winer (1962, pp. 366-367) produced significant F values for treatment effects and Trials. The F for interaction is less than 2.03 and is not significant. A summary of the analysis is given in Table 5.

TABLE 5

ANALYSIS OF VARIANCE OF STANDARD-SET CONGRUENT SCORES OVER A SERIES OF EIGHT TRIALS OF COGNITIVE TASKS OF TUTORS AND CONTROLS

Source of Variation	Sums of Squares	Degrees of Freedom	Mean Squares	F Ratio	Probability
A. Treatments	188.878	1	188.88	7.50	< 01*
Error (a)	2013.525	80	25.17		
B. Trials	340.493	7	48.642	16.135	<.01*
A x B					
Treatment x Trials	30.499	7	4.357	1.445	
Error (b)	1688.257	560	3.015		
Total	4261.652	655			

$F_{.95}(1, 80) = 3.96$ $F_{.99}(1, 80) = 6.96$ *one-tailed

$F_{.95}(7, 560) = 2.03$ $F_{.99}(7, 560) = 2.65$

The F ratio of treatments in Table 5 was obtained by dividing the indicated means squares of treatments, by the mean square of the error of estimate (a). The obtained value of F for treatments is 7.504. A value of 3.96 is the critical value at the five percent level of confidence; 6.96 is the critical value at the one percent level for the F distribution defined by 1 and 80 degrees of freedom.

The significant F for treatment effects indicates that the difference between the experimental and control means is reliable. The difference between means is in the predicted direction and lends support to the third hypothesis that black male underachievers who accepted a tutor-leadership role set lower and more realistic standards than did the controls.

The obtained value of F for trial effects (16. 135) is significant at the one percent level of confidence. This indicates that standards set on at least one of the trials were significantly different than standards set on the others.

Hypothesis Four

Hypothesis Four addresses itself to this question: Will underachieving tutors indicate that they mediate more positive affect or feeling via their self evaluations than controls by reacting more quickly when they are asked to make a self-evaluation of their work?

Stated operationally, this hypothesis reads:

In administering self-evaluations, underachieving tutors will have a mean reaction time scores (in logarithms) lower than will their controls.

Self-evaluations refer to the verbal responses ("good" or "poor") by which the student labels his own work on each of the trials of the cognitive task.

Mean reaction time refers to the average number of seconds, transformed to a logarithmic scale, taken by the student to make an evaluation of his performance following his completion of the cognitive task.

Mean reaction time for experimental and control tutors on each of the eight trials of the cognitive task are presented in Table 6.

TABLE 6

REACTION TIMES FOR EXPERIMENTAL AND CONTROL TUTORS ON EACH OF EIGHT TRIALS OF THE COGNITIVE TASK

Group	Mean								
	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Total
E	1.65	1.63	1.40	1.28	1.19	0.99	1.10	0.90	1.27
C	2.01	1.65	1.51	1.15	1.31	1.34	1.15	1.56	1.46
Total	1.83	1.64	1.455	1.215	1.25	1.165	1.125	1.23	

The analyses of trends performed on the data, using logarithmic scores, yielded results as reported in Table 7.

TABLE 7

ANALYSIS OF VARIANCE OF REACTION TIME SCORES OVER A SERIES OF EIGHT TRIALS OF COGNITIVE TASKS FOR TUTORS AND CONTROLS

Source of Variation	Sums of Squares	Degrees of Freedom	Mean Squares	F Ratio	Probability
A. Treatments	3.149	1	3.149	2.58	<.07
Error	97.638	80	1.221		
B. Trials	44.6258	7	6.375	17.562	<.01
Treatment x Trials	48.713	7	6.959	19.171	<.01
Error	203.302	560	0.363		
Total	397.427	655			

$F_{.95}(1, 80) = 3.96$ $F_{.99}(1, 80) = 6.95$

$F_{.95}(7, 560) = 2.03$ $F_{.99}(7, 560) = 2.65$

The F ratio for treatments in Table 7 is 2.58. This obtained F value is less than the critical value required for five percent level of confidence. The obtained value of F would occur by chance less than seven times in 100. However, in the context of the current study this result does not allow for rejection of the null hypothesis associated with Hypothesis Four of the study.

The obtained value of F (17.562) among trials and the obtained value of F (19.171) of interaction between treatment and trials both have probabilities of less than 0.01, and are significant.

Figure 13 shows the plotted mean reaction time for experimentals and control tutors and thus presents graphically the interaction between the two main effects--the treatments and the trials.

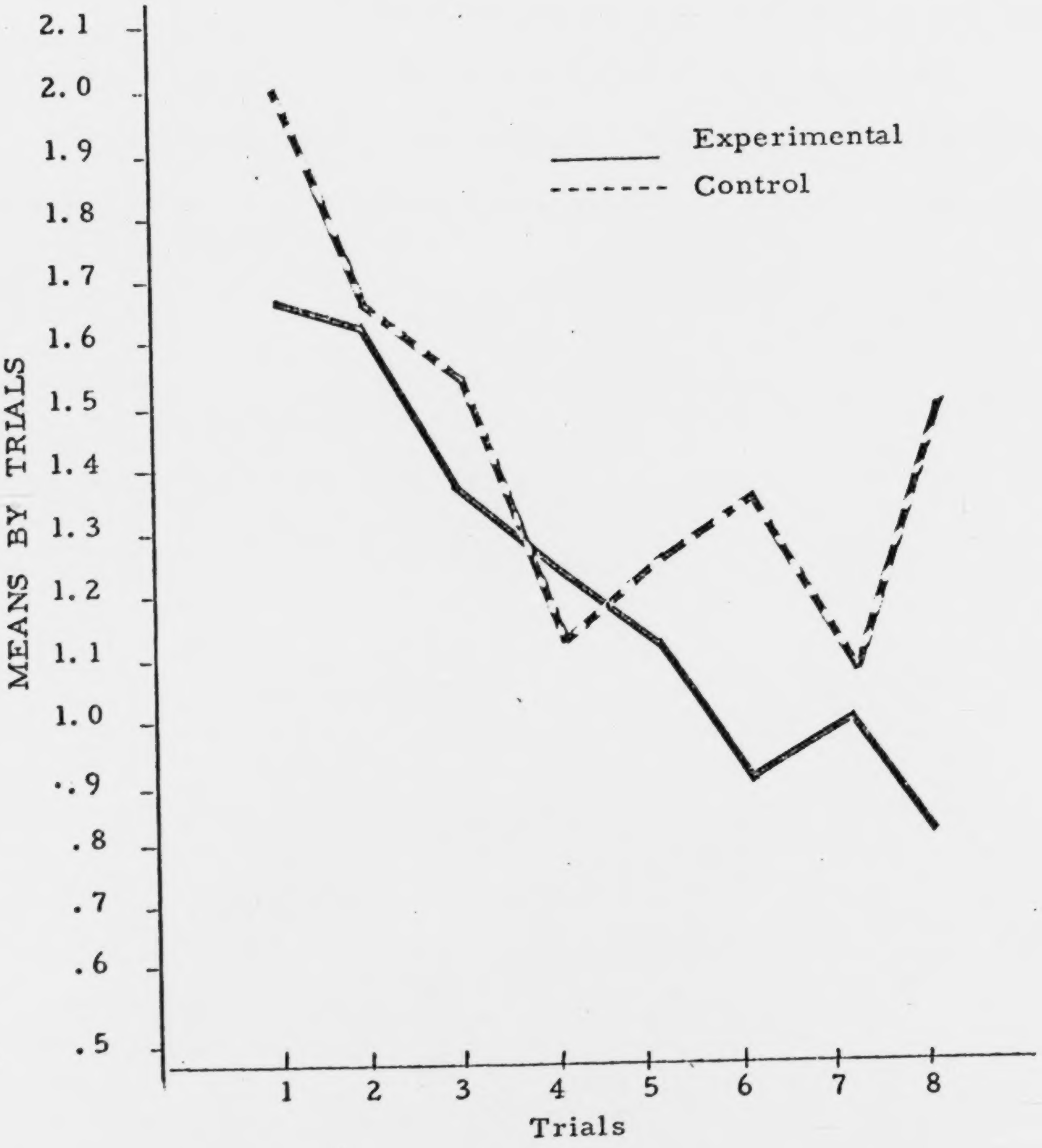

Fig. 13. Interaction effects between trials in time taken to evaluate performance over eight cognitive tasks by tutors and controls

Hypothesis Five

Hypothesis Five is concerned with the question: Will the tutors be more positive in their self-evaluation on cognitive task-performance than their controls?

Stated as an operational hypothesis, it reads:

The mean self-evaluation score of underachieving tutors will be significantly greater than will be the mean self-evaluation score for the control pupils.

Self-evaluation score refers to the assignment of the values of 3, 2, and 1 to self-evaluations of "good", "undecided" and "poor" on each of the eight trials of the cognitive task.

Mean self-evaluation scores of experimental and control tutors on each of the eight trials of the cognitive task are presented in Table 8.

TABLE 8

SELF-EVALUATION SCORES OF EXPERIMENTAL AND CONTROL TUTORS ON EACH OF EIGHT TRIALS OF THE COGNITIVE TASK

Group	Mean								
	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Total
E	2.09	2.29	2.05	2.44	2.34	2.12	2.37	2.71	2.30
C	2.09	2.17	2.07	2.56	2.32	2.32	2.63	2.76	2.36
Total	2.09	2.23	2.06	2.50	2.33	2.22	2.50	2.73	

An analyses of trends was performed using the self-evaluation scores on each of eight trials of the cognitive task as shown in Table 9.

TABLE 9

ANALYSIS OF VARIANCE OF SELF-ADMINISTERED EVALUATIONS IN EIGHT TRIALS FOR TUTORS AND CONTROLS

Source of Variation	Sums of Squares	Degrees of Freedom	Mean Squares	F Ratio	Probability
Treatments	0.672	1	0.672	0.4	
Error (a)	134.591	80	1.682		
Trials	30.120	7	4.303	9.7	<.01
Treatments x Trials	32.387	7	4.627	10.4	<.01
Error (b)	248.117	560	0.443		
Total	445.889				

$F_{.95}(1, 80) = 3.96$ $F_{.99}(1, 80) = 6.95$

$F_{.95}(7, 560) = 2.03$ $F_{.99}(7, 560) = 2.65$

The F ratio of treatments in Table 9 is less than one, and is therefore, not significant. The result does not allow for rejection of the null hypothesis associated with Hypothesis Five of the study.

The obtained value of F among trials (9.7) exceeds the critical value for one percent level of confidence (6.95) and is significant. An F of 10.4 for the interaction of the treatment and trials effects is also significant at the .01 level of confidence.

Figure 14 shows the plotted mean self-evaluations of experimental and control tutors over the eight trials of the cognitive task and thus presents graphically the significant interaction.

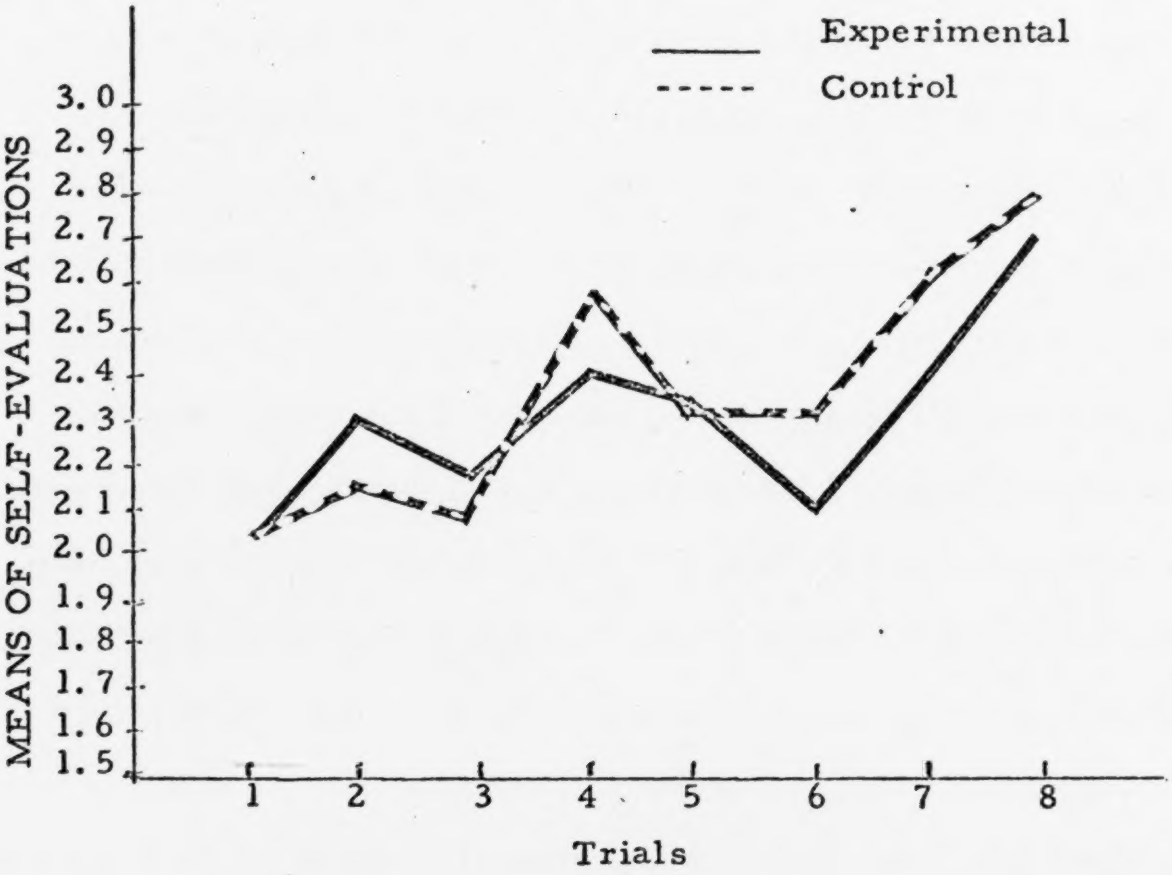

Fig. 14. Interaction effects between trials on self-administered evaluations over a series of eight cognitive tasks by tutors and controls.

Interpretation of Results

Tutees

The results presented in the previous section (see Table 2, pg. 64) support Hypothesis One for tutees. For these underachieving black male students who were tutored in reading by older underachieving pupils, the effect of the tutor-tutee relationship was to promote gains in reading achievement. These findings are consistent with the results of many reading-tutoring projects which emerged in the 1960's including, for example, the Tutorial Reading Project, 1968-1969, Indianapolis Public Schools; Youth Tutoring Youth program; SWRL (Southwest Regional Laboratory) Tutorial Program; Neighborhood Youth Corps Tutoring program; Homework Helper Program, Rosner's (1970) Cross-Grade Tutorial Program; (in progress); and Thelen's (1969) Tutorial Program (in progress). The results of the present investigation are likewise consistent with the results of the earlier studies of Cloward (1966) in which he found significant gains in reading achievement made by students who were tutored.

Support of Hypothesis One in the present study gives additional credibility to the one-to-one (tutor-tutee) relationship as a viable system for promoting achievement gains for Americans of all ages who are functioning at reading levels far below their potential capabilities.

Tutors

While tutees made significant gains (< 05) in reading achievement, the analysis of data relevant to Hypothesis Two regarding the achievement gains of tutors over their controls did not yield significant results as hypothesized (<.05) (see Table 3, p. 66). Although not supported in the current study, the hypothesis that tutors make reading achieving gains as a result of the tutor-tutee relationship remains tenable and bears continued investigation under other experimental conditions.

Several factors may have operated to contaminate the investigation of reading achievement gains for tutors: (a) controls borrowed library and paperback books from the tutors and circulated these in the classrooms; (b) motivated by peer influence or pal-relationships, tutors took controls with them to a public library or bookmobile on week-ends or after school when they went to make book selections for the next day of tutoring. (c) controls constructed incentive charts (self-reinforcement) and applied points on their individual chart in the classroom in imitating their peers who were tutors and/or tutees in the tutoring program, who were using commercially prepared incentive charts.

It has been suggested that psycho-therapeutic gains may accrue to the tutors of a tutor-tutee relationship. Riessman (1965) in discussing the "helper" therapy principle states:

> . . . it may be that emphasis is being placed on the wrong person in centering attention on the individual receiving help. More attention might well be given the individual who is providing the assistance. . . . it seems more likely that the people giving help are profiting from their role (1965, p. 27).

Three hypotheses of the current study deal with psychological and specifically motivational changes on the part of the tutors.

Results reported in the previous section support Hypothesis Three. (see Table 5). As a function of the helping relationship and the encounter with younger underachievers, tutors set task-specific standards which were, in general, lower and more congruent with their performance. Students who acted as controls maintained higher standards which were more discrepant from actual performance. This is consistent with the assumption made by Katz (1967) and confirmed by Eiszler (1969) and Mahan (1970) that underachieving male students in general set standards which are not congruent with contemporary levels of performance. The tutor-tutee relationship, based on the results of the current study, can ameliorate this condition.

With respect to standard-setting behavior an incidental finding of the current study bears interpretation. Katz (1967) assumed that the standards set by a student in a specific task situation, are primarily, if not wholly, determined by an internalized and generalized level of standards, which may have been communicated to the child from the parent in the form of high educational expectations and aspirations. Eiszler disagreed with Katz, hypothesizing instead that, in the absence of statements which would call to mind the expectations of others, certain cues in the specific task situation would play a determining role in the standards which the child sets. Eiszler investigated two such task-specific variables (prior task difficulty and prior self-evaluation) and was unable to support a hypothesis of differential effects of these variables on the standard setting behavior for high achievers and underachievers.

He did find some evidence of changes in task-specific standard-setting for all pupils in response to prior task difficulty.

The results of the present investigation with underachievers (see Table 4) indicate significant differences among trials. This finding may be interpreted to reflect some task specific but unspecified determinant of standard-setting behavior. The incidental results of the present study suggest that additional study of the task-specific determinants of standard-setting behavior are warranted.

Another psychological construct suggested by Katz, the amount of affect or feeling mediated by specific self-evaluations, was investigated. As each student performed the given task over a series of eight trials, he was asked to make a self-evaluation. Reaction time in making the self-evaluation was used as a measure of affect. Laboratory studies have demonstrated that faster reaction times are related to more positive levels of affect or feeling in a task situation.

Although not significant, the trend of the data tends to support Hypothesis Four (see Table 6) that tutors react more quickly in administering self-evaluations than controls. A significant trials effect and a significant interaction suggest the following interpretation: There are task-specific determinants of reaction time (and affect mediation) which cause differences among trials for both tutors and controls. These task specific determinants interact with the treatment conditions, i. e., reduce the differences between experimental and control tutors on some trials, and as a consequence one observes a potentially significant treatment effect (see Figure 13).

If prior task difficulty may be assumed to be, at least in part, the task-specific determinant of reaction time, unsystematic and subjective observation of the students during their tutoring sessions also suggest that differences of tutor's reaction time in judging the value of their work were also related to task difficulty. When tutors were teaching their "pupils" with easy material, or reading an easy book to them, the tutors were quick to confide to the investigator or to peers that they felt they were "doing a good job" or "I'm a good teacher." When tutors selected more difficult material to use in the tutoring sessions or the tutees brought difficult materials (difficult even for the tutors), tutors would respond at the end of the period or several days later that they weren't "getting the material across" or that they weren't too good at "their teaching job."

The effect of tutoring relationships on self-evaluation is also examined in the current study. The results do not support Hypothesis Five that tutors would administer more positive self-evaluation than controls. There is no evidence that the tutoring role results in more positive self evaluation for underachieving males. The tenability of Hypothesis Five can be questioned on the basis of the current study, but such questions must be raised in the context of the following considerations. First, controls became so interested in the tutoring program that it became difficult to limit their activities, such as getting materials (books, record players, record-book combination sets, etc.) from the library and resource centers, delivering these items to the tutors and the tutees, volunteering to "substitute" for an absent tutor (this was controlled), and competing with tutors to obtain public library cards. These factors suggest that controls may have invented their own "helping" relationships or perceived themselves as doing so, and thus have brought about increases in their own self-evaluations. That self-evaluations of controls lacked the depth of feeling of tutors has already been suggested in the interpretation of reaction time differences.

It seems possible to interpret the desire to participate in the tutoring program as a strong drive on the part of controls, a drive which may have been linked to the assumption that "good" students were chosen to be tutors. Some or many of the controls may have believed that the self-evaluation instrument given at the end of the project was to be a selection criterion for future tutor selections. After all, they had been given the instrument prior to the first selection.

Again unsystematic observations support the interpretation. The investigator was constantly being asked by many controls (during the study--on the playground, in halls, in the cafeteria, and several controls made a special visit to inquire) "When will I be chosen to tutor?" "Why aren't girls chosen?" "When do we get to do the 'big job'?" Such interest and enthusiasm was probably engendered by the tutors among the controls (no one knew who the controls were).

Although twelve weeks is considered to be a very short period of time for these psychological and achievement changes in tutors to take place, the data of the current study may be interpreted as evidence of hypothesized changes in standard-setting and reaction time data. Hypothesized changes in achievement and self evaluation must be considered as tenable although not demonstrated. Certainly, the current study supports the need for continued investigation of the effects of the tutoring relationship, particularly over longer periods of time.

Summary

Hypothesis One of the present study was supported. Tutees who were instructed by older underachieving tutors had a significantly higher reading achievement gain than did pupils who did not experience the tutor-tutee relationship.

Hypothesis Three was supported. Underachieving students, randomly assigned as tutors, with high and unrealistic standards prior to the study, changed these standards as a result of their experience, to a more realistic level, i. e., to make them more congruent with performance.

The data relevant to Hypothesis Four that tutors would show quicker reaction times in administering self-evaluations, suggested a nonsignificant trend in support of the hypothesis. The presence of a significant trials effect and significant interaction supports the interpretation that treatment effects were present but obscured by the interaction.

The data relevant to Hypothesis Two, that tutors would show significantly different increases in achievement, were not significant but showed a trend in favor of the hypothesis.

There was no evidence which would be interpreted in support of Hypothesis Five, that tutors would have more positive self-evaluation than controls.

Uncontrolled variables which might have been interpreted as affecting the dependent variables of Hypotheses two and five were discussed. In the context of the current study both of these hypotheses were considered to remain tenable although not supported.

In the final chapter of this report, the entire study will be summarized and the conclusions which grew out of the study are presented. In addition, the manner in which these findings may bear upon psychological theory and educational practice, will be given as the implications of the research.

CHAPTER SIX

SUMMARY OF IMPLICATIONS OF THE STUDY

Summary

The purpose of this study was to test several hypotheses generated by a theory of social learning and aspects of a theory of covert self-regulatory behaviors. Rotter's social learning theory was developed to explain how behavior potential can be modified when the constructs of expectancy of success and reinforcement are operating simultaneously. The theory of task-specific achievement motivation as postulated by Katz (1967) allows for the concept that a given individual may be differentially motivated to perform different kinds of tasks. According to Katz, such a concept is necessary to adequately describe differences among high and under-achieving children of minority group status.

In the current study the effects of a tutor-tutee relationship on the reading achievement and achievement motivation of under-achieving minority group children was investigated.

A randomly assigned group of forty-one tutees and their controls as well as a randomly assigned group of forty-one tutors and their controls from six inner city schools in a midwestern metropolitan area participated in this study.

Tutees were pre- and post tested only on the variable of reading achievement. Tutors were pre- and post tested on reading achievement and two psychological variables, namely, standard-setting and affect mediating self-evaluation. In establishing pre- and post standards of performance, tutors and their controls individually worked on a series of cognitive tasks which required that they form words out of ten scrambled four-letter words in a one-and-half minute time period per task. The series consisted of eight such trials. Before, during, and after the series of tasks, self-reports were elicited from the students as a measure of their covert self-regulatory behaviors--standard-setting and affect-mediating self-evaluation.

Tutees

Consistent with the evaluations of many reading-tutoring programs and with the research findings of Cloward, Hypothesis One of the study was supported--tutees made significantly greater gains in reading achievement than their controls. It was concluded that the tutor-tutee relationship produced increased reading comprehension. Support of Hypothesis One in the present study gives additional credibility to the one-to-one relationship as a viable means for promoting achievement gains for Americans of all ages who are functioning at reading levels far below their potential capabilities.

Tutors

Analysis of data relevant to the reading achievement gains of tutors over their controls did not yield results which could be interpreted to support Hypothesis Two. However, the trend of that data suggested that, although not supported in the current study, the hypothesis that tutors make reading achievement gains as a result of the tutor-tutee relationship is tenable and bears continued investigation under other experimental conditions.

Analyzed data relevant to the standard setting behavior of tutors supported Hypothesis Three--that tutors would set lower standards and standards more congruent with their performance than their controls. As assumed by Katz (1967) and confirmed by Ei szler (1969) and Mahan (1970) the students who acted as controls maintained higher and less realistic standards, which were more discrepant from actual performance. It was concluded that the tutor-tutee relationship has positive effects on the standard-setting behavior of tutors.

Also with respect to tutor standard setting, unhypothesized but significant differences among trials were found. This may be interpreted to reflect some task specific but unspecified determinant of standard-setting behavior. These incidental results suggest that further research is warranted on the task-specific determinants of standard-setting.

The analysis of the relevant data did not support the fourt hypothesis. However, the trend of the data suggests that this hypothesis--that the tutors reacted more quickly in administering self-evaluations than their controls--is also tenable.

Hypothesis Five was not supported with the results of the data. Tutors did not administer more positive self-evaluations than their controls. No evidence of the current study may be interpreted as supporting this hypothesis. Several contaminating factors were discussed in relation to the null results.

Limitations of the Study

Limitations are defined as they relate to the sample, time limitations of the investigation, and procedures of the research.

First, the sampling of the present study was limited. Only six schools from one given area were represented in the study. The sample size was small with only forty-one tutees and matched controls with the same number of tutors and their controls. The sampling was limited to black underachieving males from four of the elementary grades of the participating schools. This decreased sample size considerably.

Second, the time limitations of the investigation were such that the tutoring project was carried on for a period of only twelve weeks, three times a week for one-half hour on each of the three days. This length of tutoring time is considered to be too short. Nevertheless, in such a short time, tutees did make significant gains in reading achievement. What would the results have been for tutees as well as tutors if the tutoring sessions had been projected over a longer period of time?

The self-reports of evaluation and standard setting are accepted at face value. To a large extent the third and fifth hypotheses rest on the assumption that the subjects responded honestly to the question: How many words would you have to get right before you would say that you did a good job? How well did you do?

Finally, the peer group influence of tutors and tutees had its impact; upon returning to the classroom there was a sharing of ideas, books, reading materials, and in general, enthusiasm for the program. All of these factors constituted a problem of inadequate controls. Even though the experimental subjects and their controls were carefully matched on nine variables, the interaction of experimental subjects and controls in class-mate relationships or pal-relationships tended to contaminate the experimentally produced differences among them.

The present study was an attempt to go beyond the laboratory and the classroom situation in examining reading achievement and self-regulatory behavior. This was done through the tutor-tutee relationship, under conditions which were anything but normal. Tutoring sessions were conducted on the stage, in bleachers, vacated teachers' lounges, and various other similar places amidst the regular routines of the school situation. One might wonder what the results would have been under more favorable conditions.

Part of this present investigation required that behavior which is usually carried out without specific awareness, or at least without articulation on the part of the individual, be consciously performed and clearly recorded for others to observe. How much focusing the subjects' attentions on usually unattended behavior changes those behaviors is not known. Any attempt to study covert behavior through self-reports elicitied individually from these students imposes a difference between the experimental and non-experimental environment which limits generalizations.

Implications of the Study

In the past educators have conscientiously looked toward the reading specialist, the reading teacher, the reading consultant--people trained in the specific techniques of teaching reading skills--to provide the opportunities, situations, and materials for helping the underachieving student. It may well be that we have overemphasized the need for qualified personnel with these specific skills, and overlooked the possibilities in the one-to-one relationship of non-professionals, even of the underachiever helping another underachiever. It may also be that we have considered commonness or group work, such as classroom situation, to be more effective in learning, and over-looked the potential of the tutor-tutee relationship.

The current study also has implications for the theory of task-specific achievement motivation. As predicted, the tutor-tutee relationship resulted in changes in standard setting behavior and added to the support for a task specific rather than globally determined standard setting behavior. It seems possible to chart the course of specific motivational changes which may precede eventual changes in achievement.

The results of the present study also suggest that at least one measure of task specific achievement motivation is sensitive to a type contamination usually called the "social desirability of the response." Tutor-controls may have reported false positive self-evaluations in an effort to please the experimenter and qualify for the experimental condition. Further research on task-specific self-evaluation must more carefully control or account for the demand to produce "socially" desirable responses.

Research

The findings of this study suggest further research, and accordingly it is recommended that:

1. the additional study be done with tutoring conducted over a variety of time periods.
2. further research provide for follow-up of the students' application of skills in reading, as well as skills in assuming leadership as the students progress through the grades.
3. a longitudinal study of this nature be planned and carried through at the elementary level, with tutors and tutees selected from all grades at the elementary level, even younger students tutoring older students.
4. the study design be replicated with other minority group children as well as with non-disadvantaged populations.
5. the study be replicated at the elementary level, including students of different achievement types, as well as children of different races tutoring children of other races, i. e., black student tutoring white student.
6. a different method be used in noting reaction times to self-evaluations.
7. that different conditions under which tutoring is carried out be controlled such as, very favorable location for tutoring vs. locations where noise and the normal routines of school are not controlled.
8. that the tutoring program be replicated with trained volunteer adults, i. e., mothers on welfare, or functionally illiterate adults acting as tutors.

9. that self-evaluations be made with non-exposure to an adult figure vs. exposure to an adult figure to determine differences of self-reports.
10. that in a replicated study, contamination of the controls be kept at a minimum, i. e., that the pal-relationship of tutor and control be held at a minimum.

The major implication of the study, is to suggest support for the theory of a psychological situation, namely tutoring, for effective change in behavior. However, it appears that the tutoring should be conducted over a longer period of time, for more effective and significant changes to take place. Some psychological changes seem to appear earlier than academic-achievement changes.

APPENDIX A

CLEVELAND STUDENT QUESTIONNAIRE

CLEVELAND STUDENT QUESTIONNAIRE

Instructions (given individually by Investigator)

In order to learn about what goes on in a school, it is necessary to talk to teachers and principals, but it is also important to ask the students some questions. In your school you have been chosen to answer our questions.

There are several sections to this questionnaire. Each section will have its own instructions. I will read each set of instructions with you to be sure that you understand them. Please pay attention to the instructions so that you will know what to do and how to do it.

REMEMBER! THIS IS NOT A TEST. You will not be graded on your answers. It is a questionnaire. The purpose is to find out about your school. No one at your school will see your answers. We will ask for your name so that we can match this questionnaire with other information.

Last Name First Name

Name of School Teacher

Birthdate

The purpose of this questionnaire is to find out how good you are at unscrambling letters and making words out of them. On the following pages you will find some common four-letter words which have been scrambled by changing the order of the letters. Your job is to try to make a word out of the scrambled letters and to write the word in the space to the right of the letters.

EXAMPLE: Cat________________

WTSE WEST Dog________________ ________________

If you find any of the words difficult to unscramble, skip them and go on to the next word. It is important to get as many as you can, and you may have time to come back to those you find difficult. There will be ten words on each page and you will have one and one-half minutes to do each page. You will be instructed when to begin and when to stop. Do not start until you are given the signal. Stop working and turn the page promptly when you are asked to stop.

Before and after each set of ten words you will be asked some questions. REMEMBER: You will have ten words to do in each set and one and one-half minutes in which to do them. Do not start a set until you are given the signal. Stop immediately when you are told. In between sets of ten words you will have questions to answer. Questions "A" and "B" always refer to the set of ten words which you will do next. Questions "C" and "D" always refer to the set of ten words which you have just completed. Try to answer each question separately from each other question and do them quickly. When you are working the scrambled words, work as fast as you can and try to get as many as you can.

STOP HERE

Now turn to the next page

Before you begin this,

answer these two questions:

A. How many words do you expect

to get right?__________________

B. How many words would you have

to get right before you would

say that you did a "GOOD JOB"?

____

tbae______________________________

etda______________________________

tnod______________________________

frma______________________________

egrw______________________________

wekn______________________________

ilml______________________________

kpci______________________________

urep______________________________

atse______________________________

STOP! You have finished the first set. Do not go on until you are told to do so.

C. How many words did you get right? __________

D. How well did you do?

____

Before you begin this
answer these two questions:

A. How many words do you expect to get right?________________

B. How many words would you have to get right before you would say that you did a "GOOD JOB"?

____

rtos____________________________

eavw____________________________

etar____________________________

elbl____________________________

lade____________________________

llah____________________________

alod____________________________

apht____________________________

dsee____________________________

shaw____________________________

STOP! You have finished the second set. Do not go on until you are told to do so.

C. How many words did you

get right? ____________

D. How well did you do?

____

Before you begin this
answer these two questions:

A. How many words do you expect to get right? ____________

B. How many words would you have to get right before you would say that you did a "GOOD JOB"?

____

latl______________________________

gsno______________________________

ilks______________________________

leur______________________________

rcea______________________________

enno______________________________

seiw______________________________

elab______________________________

tila______________________________

ectn______________________________

STOP! You have finished the third set. Do not go on until you are told to do so.

C. How many words did you get right? ____________

D. How well did you do?

____

Before you begin this
answer these two questions:

A. How many words do you expect to get right? ____________

B. How many words would you have to get right before you would say that you did a "GOOD JOB"?

____

dols______________________________

laoc______________________________

zeis______________________________

dere______________________________

kepe______________________________

telf______________________________

hurs______________________________

teag______________________________

laer______________________________

rwae______________________________

STOP! You have finished the fourth set. Do not go on until you are told to do so.

C. How many words did you get right? ____________

D. How well did you do? ____________

Before you begin this
answer these two questions:

A. How many words do you expect to get right? ____________

B. How many words would you have to get right before you would say that you did a "GOOD JOB"? ____________

aybb______________________________

rite______________________________

nbra______________________________

ptos______________________________

ocpo______________________________

wnos______________________________

sutd______________________________

sowl______________________________

rimf______________________________

phos______________________________

STOP! You have finished the fifth set. Do not go on until you are told to do so.

C. How many words did you get right?______________

D. How well did you do?

____

Before you begin this
answer these two questions:

A. How many words do you expect to get right? __________

B. How many words would you have to get right before you would say that you did a "GOOD JOB"? __________

ngoe______________________________

asdn______________________________

yrma______________________________

lais______________________________

kace______________________________

tras______________________________

cloo______________________________

prit______________________________

yase______________________________

ewts______________________________

STOP! You have finished the sixth set. Do not go on until you are told to do so.

C. How many words did you get right? ______

D. How well did you do? ________

Before you begin this
answer these two questions:

A. How many words do you expect to get right? ____________

B. How many words would you have to get right before you would say that you did a "GOOD JOB"?

____

nrio ____________________

nsik ____________________

tigf ____________________

efls ____________________

hsif ____________________

gsin ____________________

atse ____________________

froo ____________________

nono ____________________

rdal ____________________

STOP! You have finished the seventh set. Do not go on until you are told to do so.

C. How many words did you get right? ____________

D. How well did you do? ____________

Before you begin this
answer these two questions:

A. How many words do you expect
to get right? ____________

B. How many words would you have
to get right before you would
say that you did a "GOOD JOB"?

tbse______________________________

ilml______________________________

alod______________________________

latl______________________________

enno______________________________

laoc______________________________

laer______________________________

ocpo______________________________

sowl______________________________

prit______________________________

STOP! You have now finished the final set. Do not go on until told to do so.

C. How many words did you get right? ____________

D. How well did you do?

____

APPENDIX B

SUPPLEMENTARY TABLES

END OF QUESTIONNAIRE

TABLE 10

EXPERIMENTAL TUTEES AND MATCHED CONTROLS ON VARIABLES OF NON-VERBAL IQ, PRE-TEST STANDARD SCORE IN READING COMPREHENSION, PRE-TEST GRADE EQUIVALENT SCORE IN READING COMPREHENSION

Number (ID)		Non-Verbal IQ		Standard Score in Reading Comprehension		Grade Level Scores in Reading Comprehension	
E	C	E	C	E	C	E	C
102	101	87	79	36	30	1.6	1.5
104	103	78	78	36	31	1.5	1.5
106	105	75	87	29	29	1.4	1.4
108	107	87	78	30	29	2.1	2.0
110	109	86	80	29	29	2.0	2.0
112	111	75	79	32	34	1.5	1.6
114	113	67	75	30	43	1.5	2.2
116	115	93	87	29	35	2.0	2.3
118	117	92	101	43	39	2.2	1.8
120	119	88	90	38	41	1.7	1.9
122	121	82	79	29	31	1.4	1.5
124	123	110	102	49	48	2.9	2.8
126	125	87	90	41	46	1.9	2.5
128	127	83	72	29	29	2.0	2.0
130	129	77	84	41	47	1.9	2.6
132	131	75	73	29	31	1.4	1.5
134	133	92	103	30	29	2.1	2.0
136	135	92	97	43	44	2.2	2.3
138	137	87	87	34	43	1.6	2.2
140	139	82	80	29	29	1.0	2.0
142	141	76	78	30	30	1.5	1.5
144	143	70	77	34	39	1.6	1.8
146	145	109	103	34	36	1.6	1.6
148	147	80	79	32	29	1.5	1.4
150	149	64	74	38	43	1.7	2.2
152	151	84	78	41	34	1.9	1.6
154	153	92	87	32	38	1.5	1.7
156	155	89	91	44	36	2.3	1.6
158	157	103	96	41	43	1.9	2.2
160	159	84	83	42	31	2.0	1.5
162	161	68	79	29	42	1.4	2.0
164	163	105	91	32	34	2.2	2.2
166	165	94	94	42	38	2.0	1.7
168	167	100	116	43	47	2.2	2.6
170	169	104	94	41	35	2.8	2.4
172	171	104	92	37	48	2.4	2.7
174	173	98	88	34	29	2.2	2.0
176	175	90	96	39	43	1.8	2.2
178	177	88	88	41	31	1.9	1.5
180	179	92	95	44	39	2.3	1.8
182	181	96	92	38	38	1.7	1.7

TABLE 11

EXPERIMENTAL TUTEES AND CONTROLS ON VARIABLES OF PRESTIGE SCALE (socioeconomic level), CHRONOLOGICAL AGE, SCHOOL AND TEACHER

Number (ID)		Prestige Scale Score		Chronological Age		School		Teacher	
E	C	E	C	E	C	E	C	E	C
102	101	17	17	9-6	8-8	3	3	21	21
104	103	17	17	8-7	8-7	3	3	21	21
106	105	12	26	8-6	9-0	3	3	22	22
108	107	20	12	9-7	9-7	3	3	23	23
110	109	12	12	9-1	9-5	3	3	24	24
112	111	17	14	8-11	8-4	3	3	21	21
114	113	16	17	8-11	8-7	3	3	22	22
116	115	17	17	10-0	9-7	3	3	23	23
118	117	17	17	8-6	8-11	3	3	22	22
120	119	12	12	8-0	8-4	3	3	22	22
122	121	14	12	8-2	8-9	3	3	22	22
124	123	16	12	8-1	8-9	3	3	22	22
126	125	28	12	8-1	8-11	3	3	21	21
128	127	29	16	9-2	9-7	3	3	4	4
130	129	17	20	9-4	9-3	3	3	22	22
132	131	12	17	8-0	8-4	3	3	21	21
134	133	14	27	10-9	9-9	3	3	4	4
136	135	17	17	9-0	9-0	5	5	25	25
138	137	16	16	9-10	9-9	5	5	25	25
140	139	17	17	9-4	10-10	5	5	26	26
142	141	21	17	8-4	8-7	1	1	27	27
144	143	17	17	9-0	9-3	1	1	27	27
146	145	17	17	8-7	8-5	1	1	27	27
148	147	32	25	9-0	9-3	1	1	27	27
150	149	17	12	9-10	9-0	2	2	28	28
152	151	17	12	9-3	8-9	2	2	29	29
154	153	12	17	8-9	8-5	2	2	29	29
156	155	17	27	8-5	8-1	2	2	29	29
158	157	17	25	8-5	8-9	2	2	28	28
160	159	14	12	9-5	8-7	2	2	28	28
162	161	12	16	8-0	8-3	2	2	28	28
164	163	17	17	10-2	9-4	2	2	11	11
166	165	12	17	9-4	9-3	6	6	30	30
168	167	12	25	9-0	9-2	6	6	31	31
170	169	16	14	10-11	9-8	6	6	32	32
172	171	27	20	9-4	10-1	6	6	30	30
174	173	12	17	9-9	9-4	4	4	33	33
176	176	12	17	8-8	8-2	4	4	34	34
178	177	12	17	9-11	9-2	4	4	34	34
180	179	20	12	9-0	8-10	4	4	35	35
182	181	12	12	8-1	8-1	4	4	34	34

TABLE 12

EXPERIMENTAL TUTEES AND CONTROLS ON PRE- AND POST STANDARD SCORE IN READING COMPREHENSION

Number (ID)		Standard Scores in Reading Comprehension			
		Pre-		Post	
E	C	E	C	E	C
102	101	36	30	35	37
104	103	36	31	38	33
106	105	29	29	43	30
108	107	30	29	30	37
110	109	29	29	29	29
112	111	32	34	35	35
114	113	30	43	42	36
116	115	29	35	30	30
118	117	43	39	37	30
120	119	38	41	43	33
122	121	29	31	30	33
124	123	49	48	60	48
126	125	41	46	36	44
128	127	29	29	32	32
130	129	41	47	36	43
132	131	29	31	41	39
134	133	30	29	36	33
136	135	43	44	44	46
138	137	34	43	36	41
140	139	29	29	40	30
142	141	30	30	45	32
144	143	34	39	40	36
146	145	34	36	35	39
148	147	32	29	37	30
150	149	38	43	41	29
152	151	41	34	37	33
154	153	32	38	37	41
156	155	44	36	44	39
158	157	41	43	30	38
160	159	42	31	36	36
162	161	29	42	29	37
164	163	32	34	31	41
166	165	42	38	39	30
168	167	43	47	40	43
170	169	41	35	48	41
172	171	37	48	47	46
174	173	34	29	44	29
176	175	39	43	36	35
178	177	41	31	33	36
180	179	44	39	35	45
182	181	38	38	40	35

TABLE 13

EXPERIMENTAL TUTEES AND CONTROLS ON PRE- AND POST GRADE EQUIVALENT SCORES IN READING COMPREHENSION

Number (ID)		Grade Equivalent Scores in Reading Comprehension			
		Pre-		Post	
E	C	E	C	E	C
102	101	1.6	1.5	1.9	2.2
104	103	1.5	1.5	2.3	1.8
106	105	1.4	1.4	2.8	1.6
108	107	2.1	2.0	2.3	2.9
110	109	2.0	2.0	2.0	2.0
112	111	1.5	1.6	1.9	1.9
114	113	1.5	2.2	2.7	2.0
116	115	2.0	2.3	2.2	2.3
118	117	2.2	1.8	2.2	1.6
120	119	1.7	1.9	2.8	1.8
122	121	1.4	1.5	1.6	1.8
124	123	2.9	2.8	5.8	3.6
126	125	1.9	2.5	2.0	3.0
128	127	2.0	2.0	2.4	2.4
130	129	1.9	2.6	2.0	2.8
132	131	1.4	1.5	2.6	2.4
134	133	2.1	2.0	2.8	2.5
136	135	2.2	2.3	3.0	3.3
138	137	1.6	2.2	2.0	2.6
140	139	1.0	2.0	2.5	2.5
142	141	1.5	1.5	3.1	1.7
144	143	1.6	1.8	2.5	2.0
146	145	1.6	1.6	1.9	2.4
148	147	1.5	1.4	2.2	1.6
150	149	1.7	2.2	2.6	1.5
152	151	1.9	1.6	2.2	1.8
154	153	1.5	1.7	2.2	2.6
156	155	2.3	1.6	3.0	2.4
158	157	1.9	2.2	1.6	2.3
160	159	2.0	1.5	2.0	2.0
162	161	1.4	2.0	1.5	2.2
164	163	2.2	2.2	2.3	3.3
166	165	2.0	1.7	2.4	1.6
168	167	1.2	2.6	2.5	2.8
170	169	2.8	2.4	4.7	3.3
172	171	2.4	2.7	4.4	3.3
174	173	2.2	2.0	3.9	2.1
176	175	1.8	2.2	2.0	1.9
178	177	1.9	1.5	1.8	2.0
180	179	2.3	1.8	1.9	3.1
182	181	1.7	1.7	2.5	1.9

TABLE 14

EXPERIMENTAL TUTEES AND CONTROLS ON PRE- AND POST RAW SCORES IN READING COMPREHENSION

Number (ID)		Raw Scores in Reading Comprehension			
		Pre-		Post	
E	C	E	C	E	C
102	101	10	6	13	15
104	103	7	7	16	12
106	105	5	4	21	10
108	107	6	3	10	18
110	109	1	3	5	5
112	111	8	9	13	13
114	113	6	15	20	14
116	115	2	10	8	10
118	117	15	12	15	10
120	119	11	13	21	12
122	121	4	7	10	12
124	123	22	21	42	29
126	125	13	18	14	23
128	127	3	4	12	12
130	129	13	19	14	21
132	131	5	7	19	17
134	133	6	4	17	13
136	135	15	16	23	26
138	137	9	15	14	19
140	139	0	4	18	14
142	141	6	6	24	11
144	143	9	12	18	14
146	145	9	10	13	17
148	147	8	5	15	10
150	149	11	15	19	8
152	151	13	9	15	12
154	153	8	11	15	19
156	155	16	10	23	17
158	157	13	15	10	16
160	159	14	7	14	14
162	161	5	14	7	15
164	163	7	8	11	22
166	165	11	14	17	10
168	167	15	19	18	21
170	169	17	9	32	22
172	171	12	20	30	26
174	173	8	4	26	7
176	175	12	15	14	13
178	177	13	7	12	14
180	179	16	12	13	24
182	181	11	11	18	13

TABLE 15

EXPERIMENTAL TUTORS AND MATCHED CONTROLS ON VARIABLES OF NON-VERBAL IQ, PRE-TEST STANDARD SCORES IN READING COMPREHENSION, PRE-TEST GRADE EQUIVALENT SCORE IN READING COMPREHENSION, AND CHRONOLOGICAL AGE

Number (ID)		Non-Verbal IQ		Standard Scores		Grade level Scores		Chronological Age	
				Reading Comprehension					
E	C	E	C	E	C	E	C	E	C
002	001	65	72	29	29	2.1	2.3	11-3	11-3
004	003	96	93	41	42	4.2	4.4	11-0	11-1
006	005	85	85	29	29	2.1	2.1	11-9	11-3
008	007	111	102	41	40	3.5	3.4	9-11	10-5
010	009	98	105	30	37	2.5	3.2	11-3	11-4
012	011	106	96	41	39	2.9	2.6	9-5	9-1
014	013	70	82	29	33	2.2	2.5	12-6	11-6
016	015	101	103	42	39	4.5	3.7	11-0	10-11
018	017	103	98	40	36	3.3	2.9	10-0	10-1
020	019	63	66	38	37	3.4	3.2	12-0	12-9
022	021	89	99	29	29	2.2	2.2	10-0	10-6
024	023	110	102	49	46	5.0	4.5	10-8	10-6
026	025	100	100	41	41	4.2	4.1	11-0	11-3
028	027	90	88	29	33	2.1	2.7	13-2	12-6
030	029	76	84	33	33	2.5	2.5	10-3	10-2
032	031	90	83	36	29	3.1	2.1	11-10	11-7
034	033	102	102	40	40	3.3	3.4	11-2	10-5
036	035	84	92	41	41	2.9	2.9	10-3	9-8
038	037	80	84	29	29	2.4	2.1	11-10	12-4
040	039	117	112	44	43	3.2	3.1	10-9	10-9
042	041	84	79	39	39	3.7	3.7	12-9	12-9
044	043	88	90	40	40	4.0	3.9	11-11	11-0
046	045	77	85	39	39	3.7	3.8	12-2	12-1
048	047	75	85	39	39	3.8	3.8	11-6	12-1
050	049	79	89	30	37	2.5	3.3	11-1	11-5
052	051	101	104	41	46	2.9	3.4	9-1	9-4
054	053	66	66	33	30	2.3	2.1	11-0	10-6
056	055	90	98	29	40	2.0	2.7	9-4	8-11
058	057	101	91	35	33	2.4	2.3	9-5	9-4
060	059	90	96	40	43	3.9	4.7	11-4	11-8
062	061	114	113	42	44	3.0	3.2	9-1	9-5
064	063	101	100	42	38	4.4	3.4	11-5	12-4
066	065	93	103	34	39	2.6	3.2	11-2	11-0
068	067	94	91	39	40	3.7	4.0	11-5	11-2
070	069	87	96	40	41	3.9	4.2	11-3	11-3
072	071	109	98	46	42	4.5	4.5	10-2	11-3
074	073	104	99	37	39	3.2	3.8	11-1	11-5
076	075	89	84	42	37	3.0	2.4	9-9	9-10
078	077	71	77	39	40	2.6	2.7	10-11	11-9
080	079	89	90	39	41	3.8	4.1	12-0	11-7
082	081	70	71	31	29	2.4	2.2	10-9	11-0

TABLE 16

EXPERIMENTAL TUTORS AND CONTROLS ON THE VARIABLES OF PRESTIGE SCALE (socioeconomic level), SCHOOL, GRADE AND TEACHER

Number (ID)		Prestige Scale Score		School		Actual Grade in School		Teacher	
E	C	E	C	E	C	E	C	E	C
002	001	12	12	3	3	6	6	1	1
004	003	23	27	3	3	6	6	2	2
006	005	27	25	3	3	6	6	1	1
008	007	27	12	3	3	5	5	3	3
010	009	27	17	3	3	6	6	1	1
012	011	12	35	3	3	4	4	4	4
014	013	25	12	3	3	5	5	5	5
016	015	35	35	3	3	6	6	1	1
018	017	42	12	3	3	5	5	5	5
020	019	17	17	3	3	6	6	1	1
022	021	17	12	3	3	5	5	5	5
024	023	26	17	3	3	5	5	3	3
026	025	14	17	3	3	6	6	2	2
028	027	12	17	3	3	6	6	1	1
030	029	12	14	3	3	5	5	5	5
032	031	28	27	3	3	6	6	1	1
034	033	20	12	3	3	5	5	3	3
036	035	23	27	5	5	4	4	6	6
038	037	17	18	5	5	6	6	7	7
040	039	17	17	5	5	4	4	6	6
042	041	17	17	1	1	6	6	8	8
044	043	17	16	1	1	6	6	8	8
046	045	17	27	1	1	6	6	8	8
048	047	17	27	1	1	6	6	8	8
050	049	12	26	2	2	6	6	9	9
052	051	25	16	2	2	4	4	10	10
054	053	14	27	2	2	4	4	11	11
056	055	27	27	2	2	4	4	10	10
058	057	30	17	2	2	4	4	11	11
060	059	33	17	2	2	6	6	9	9
062	061	17	23	2	2	4	4	10	10
064	063	27	17	2	2	6	6	12	12
066	065	12	17	6	6	5	5	13	13
068	067	27	42	6	6	6	6	14	14
070	069	35	42	6	6	6	6	15	15
072	071	35	17	6	6	5	5	16	16
074	073	17	17	4	4	6	6	17	17
076	075	12	14	4	4	4	4	18	18
078	077	31	12	4	4	4	4	18	18
080	079	12	20	4	4	6	6	19	19
082	081	28	35	4	4	5	5	20	20

TABLE 17

EXPERIMENTAL TUTORS AND CONTROLS ON PRE- AND POST STANDARD SCORES IN READING COMPREHENSION

Number (ID)		Standard Scores in Reading Comprehension			
		Pre-		Post	
E	C	E	C	E	C
002	001	29	29	29	29
004	003	41	42	52	36
006	005	29	29	33	29
008	007	41	40	46	38
010	009	30	37	29	40
012	011	41	39	37	32
014	013	29	33	29	33
016	015	42	39	41	32
018	017	40	36	46	39
020	019	38	37	36	35
022	021	29	29	42	29
024	023	49	46	51	49
026	025	41	41	44	43
028	027	29	33	29	29
030	029	33	33	29	33
032	031	36	29	35	29
034	033	40	40	37	38
036	035	41	41	36	42
038	037	29	29	29	29
040	039	44	43	47	38
042	041	39	39	35	40
044	043	40	40	47	38
046	045	39	39	39	44
048	047	39	39	41	40
050	049	30	37	34	30
052	051	41	46	36	49
054	053	33	30	32	34
056	055	29	40	30	51
058	057	35	33	42	41
060	059	40	43	42	41
062	061	42	44	45	44
064	063	42	38	55	37
066	065	34	39	37	43
068	067	39	40	46	45
070	069	40	41	40	37
072	071	46	42	48	41
074	073	37	39	38	37
076	075	42	37	34	45
078	077	39	40	33	30
080	079	39	41	41	44
082	081	31	29	32	29

TABLE 18

EXPERIMENTAL TUTORS AND CONTROLS ON PRE- AND POST GRADE EQUIVALENT SCORES IN READING COMPREHENSION

Number (ID)		Grade Equivalent Scores in Reading Comprehension			
		Pre-		Post	
E	C	E	C	E	C
002	001	2.1	2.3	2.2	2.0
004	003	4.2	4.4	7.6	3.9
006	005	2.1	2.1	3.1	2.3
008	007	3.5	3.4	4.9	3.6
010	009	2.5	3.2	2.2	4.5
012	011	2.9	2.6	2.9	2.4
014	013	2.2	2.5	2.5	2.8
016	015	4.5	3.7	4.8	3.0
018	017	3.3	2.9	4.9	3.8
020	019	3.4	3.2	3.9	3.4
022	021	2.2	2.2	4.2	2.2
024	023	5.0	4.5	6.1	5.6
026	025	4.2	4.1	5.3	5.1
028	027	2.1	2.7	2.7	2.5
030	029	2.5	2.5	2.3	2.6
032	031	3.1	2.1	3.4	2.2
034	033	3.3	3.4	3.3	3.6
036	035	2.9	2.9	2.9	3.4
038	037	2.4	2.1	2.4	2.5
040	039	3.2	3.1	4.5	3.0
042	041	3.7	3.7	3.4	4.5
044	043	4.0	3.9	5.8	4.2
046	045	3.7	3.8	4.4	5.3
048	047	3.8	3.8	4.8	5.1
050	049	2.5	3.3	3.2	2.8
052	051	2.9	3.4	2.8	4.8
054	053	2.3	2.1	2.4	2.5
056	055	2.0	2.7	2.2	5.1
058	057	2.4	2.3	3.4	3.3
060	059	3.9	4.7	4.9	4.8
062	061	3.0	3.2	4.0	3.9
064	063	4.4	3.4	8.8	4.0
066	065	2.6	3.2	3.3	4.4
068	067	3.7	4.0	4.5	5.5
070	069	3.9	4.2	4.5	4.0
072	071	4.5	4.5	5.5	5.0
074	073	3.2	3.8	4.2	4.0
076	075	3.0	2.4	2.6	4.0
078	077	2.6	2.7	2.4	2.3
080	079	3.8	4.1	4.8	5.3
082	081	2.4	2.2	2.7	2.2

TABLE 19

EXPERIMENTAL TUTORS AND CONTROLS ON PRE- AND POST RAW SCORES IN READING COMPREHENSION

Number (ID)		Raw Scores in Reading Comprehension			
		Pre-		Post	
E	C	E	C	E	C
002	001	5	8	7	7
004	003	25	23	44	26
006	005	6	6	20	10
008	007	19	18	34	24
010	009	10	16	9	31
012	011	13	11	18	12
014	013	7	10	13	17
016	015	27	20	33	19
018	017	17	13	34	25
020	019	18	16	26	23
022	021	7	7	29	8
024	023	32	27	40	38
026	025	25	24	36	35
028	027	6	12	16	13
030	029	10	10	10	15
032	031	15	6	23	7
034	033	17	18	22	24
036	035	13	13	17	23
038	037	9	6	13	13
040	039	16	15	31	19
042	041	20	20	23	31
044	043	23	22	39	29
046	045	20	21	30	36
048	047	21	21	33	34
050	049	10	17	21	17
052	051	13	18	17	33
054	053	8	5	12	14
056	055	3	12	8	35
058	057	9	8	23	22
060	059	22	29	34	33
062	061	14	16	27	26
064	063	26	18	46	27
066	065	11	16	22	30
068	067	20	23	31	37
070	069	22	25	31	27
072	071	27	27	37	30
074	073	16	21	29	27
076	075	14	9	14	27
078	077	14	12	13	9
080	079	21	24	33	36
082	081	9	7	16	10

APPENDIX C

SOME SUBJECTIVE OBSERVATIONS

SOME SUBJECTIVE OBSERVATIONS

All too often, research in the area of psychology and education is reported in cold, statistical, methodologically precise terms. This is of course, necessary if we are to further our scientific knowledge of man. But it would seem that if we were to lose sight of the subjective and emotional aspects of our experiences simply because they are not amenable to statistical treatment, we have only looked at one major part of a study.

Comments from the teachers of students who participated in this study, together with comments made by the tutors and tutees, are seemingly worth note in this study.

Some of the comments indicate that the experience evoked observed achievement in various areas, together with comments that indicate an observed deeper personal growth for some of the tutors and the tutees.

The complete effects of the tutor-tutee relationships are difficult to assess statistically; and, therefore, the investigator feels that some observations are worth noting; perhaps some of these subjective impressions may lay the groundwork for further investigation of the tutor-tutee relationship and its implications for the tutoring process.

The following will serve as a sampling of positive comments made by teachers:

> I feel this research program has been a definite benefit to a. . . . He has made firm progress, especially in language arts, and his interest in other subjects is much improved.

A. . . . seems to feel more at ease in the general classroom situation and he readily takes part in classroom discussion and activities. He has always been a good boy who tries to do well but since your program's inception I sense a definite attitude in A. . . of confidence and also security.

Comments of Teacher 17

S. . . is very enthusiastic about this program. He is showing more interest in books and is doing more things for himself in less time and is less timid.

Comments of Teacher 10

B. . . has been showing a definite improvement in reading. In his reading group he seems more alert and concentrates harder than ever before. He doesn't need as much help with new words. His comprehension is also improving. He is always interested in new books now.

Comments of Teacher 27

C. . . has really been "gung-ho" for this special period in his day. Has really worked; watches eagerly for your car and has had a most happy experience.

Comments of Teacher 31

C. . . has shown improvement in interpretation of reading material. Attacking of words has greatly improved, although he is still careless with some skills. C. . . seems to take more care and thought toward his school work.

Comments of Teacher 35

R. . . has showed an awareness of being prompt in attendance since the time the tutoring classes began. His spelling grades have improved from F's and E's to an average of 'C'. R. . . has started to take textbooks home for homework during the evening hours. For the first time I can identify that this pupil is aware of the importance of self-application toward his studies. All of this has happened since this research program began.

Comments of Teacher 17

D. . . is very eager to participate and to have D. . . excited about anything is really good.

Comments of Teacher 34

T. . .'s attention span and his effort have shown great improvement since his participation in your research program. T. . . has always been a rather slow learner, but is cooperative and his recent moderate achievements in class, I feel can be attributed to the help he is getting in this reading program. T. . . looks forward to his participation in your program each week and he seems to be less apprehensive in challenging classroom situations.

Comments of Teacher 19

Ever since K. . . has been in the tutoring program he seems to be putting a lot more effort in his class work. Before he was in the program he seemed little if not at all interested in school. Now he is making an attempt to get his work in on time. Instead of sitting and drawing he will pick up an Encyclopedia, or some book of interest and read about something that is interesting to him. I don't have to sit there and keep after him to do his work as I did before. It makes me feel good that he will at least try to do his work, and that he does have an interest. I believe that the tutoring program has helped K. . . and should be used on more slow learners.
Comments of Teacher 20

F. . . always registers an eagerness for the tutoring period to begin. He has a real sense of belonging to "something special".
Comments of Teacher 32

From the very start L. . . was eager to go to the tutoring program. He very diligently gets all of his work done in order to go "downstairs". I believe this program has made L. . . a better student in his other studies, nothing distracts him now when he is working. He now reads books aloud to the class, helps with difficult words in reading group and reads books with and to other children.
Comments of Teacher 34

F. . . is always eager to go to this program of tutoring. He loves to read whenever he has nothing to do and also when he does have other things to do; he pulls out a book and reads quietly to himself.
Comments of Teacher 34

E. . .'s first positive reaction toward the program appeared after his tutor used a movie or slides on cars, --this motivated him very much because he himself had some of those cars on a postcard. He was fascinated. He then got a book on cars. He seems very eager to go to reading; however, at times he seemed so excited about the tutoring program that he couldn't keep his mind on his regular school work. It seemed every Monday morning E. . . would ask if today is the day he goes downstairs. Lately E. . . has gained more confidence in reading and helps others in reading group. He has brought the books from the tutoring program and read and shared them with others.
Comments of Teacher 33

B. . .'s reading interest and ability has improved. He has not only used the books and materials of the program and the classroom, but has gotten books from the Bookmobile related to what he was studying. . .
Comments of Teacher 24

R. . .'s desire to participate in his subjects has increased greatly. He was somewhat withdrawn, but has started to volunteer in class discussions.
Comments of Teacher 3

F. . . was very proud of the books he could now read. He would always bring his book and show his classmates what he was reading. He also used extra time putting together a puzzle for the reading program.
Comments of Teacher 4

R. . .'s spelling has greatly improved since being involved in the tutoring program. His grades have gone from F to B in that subject.
Comments of Teacher 3

F. . . has improved tremendously since the inauguration of your program. His attention span is longer. He attacks words that he would never dream of attacking before. His classroom behavior has correspondingly improved.
Comments of Teacher 1

R. . . is not the discipline problem that he used to be. Sometimes he acts out of turn but not as frequently as before. His attention span has improved and he seems to react better to the classroom situation.
Comments of Teacher 1

K. . . seems to be interested in reading much more now.
Comments of Teacher 1

E. . .'s attitude toward school has improved. He has a renewed interest in learning. He showed spurts of this type of interest before but it was never sustained over a considerable period as it is now. Comments of Teacher 1

R. . . has been reading his books and sharing them with classmates. He seems really excited about the things that he is doing in reading. He has been getting books that relate to other things we are learning about in class. For example, R. . . brought a book about airplanes and explained pictures to the class. R. . . read to me from his book A Hole is to Dig. He didn't do so well but with some prodding I managed to get him to sound out some words. He did try very hard--and that's the first step. Comments of Teacher 22

T. . . is gaining confidence in himself. His spelling is improving very much. Now he is beginning to reason things out much better. His interest is good; he is not having trouble with word clues. T. . . enjoys going to this class very much. Comments of Teacher 27

> For the first time this year G. . . is thrilled about books. He enjoys this class very much. His spelling is improving and is understanding some subject matter much better. He is making slow steady progress.
>
> Comments of Teacher 26

Such teacher observations do coincide with the results of the statistical analysis, particularly in reference to the tutees. Teachers of students who were tutors commented on behavior changes, such as less a discipline problem, less absenteeism, greater interest in learning experiences, more self-confidence, eagerness to face classroom situations with a feeling of security, greater self-application toward study, signs of motivation appearing, greater concentration in work-study habits. All of these comments reflect on the investigator's interpretation of the results of Hypothesis Two through Five. --that psychological changes seem to appear before academic changes and with some students it seems to be a simultaneous change with perhaps the psychological changes making the more significant change, with emerging changes in achievement.

As would be expected, not all comments were favorable, although negative observations were very minimal. A sampling of these are given.

> I noticed that B. . . has become more assertive. He gets into trouble in class now where before he never would. However, I do not believe that this is a negative characteristic, although it appears as one. I think it is very healthy that he is becoming less intimidated.
>
> Comment of Teacher 1

> R. . . still does not seem to accept responsibility for his own work. However, he has always been lax in this area. He only works when he feels like it.
>
> Comments of Teacher 10

> Very little change with G. . .
> Comments of Teacher 10

> S. . .'s behavior was none too good to begin with but he has become more belligerent and impudent. His opinion of himself was high in September. Because he has been chosen to help another child his opinion of himself has become even higher. . . Comments of Teacher 16

> D. . . missed much of his language and spelling instruction in the classroom during these past months. He is very slow student and daydreams. It was almost impossible for him to make up written work and he completely missed all explanations and discussion. However, D. . . has improved in his reading comprehension during these past few months. I certainly hope this will result in continued progress next school year. Comments of Teacher 14

Some comments from the tutors and tutees are now observed:

> I like this reading program because it help me read and lern to do something. (Student 012)

> I can now read good. I like reading.
> (Student 115)

> I like to learn now. My student was good.
> (Student 054)

> I really larned to like to study.
> (Student 022)

> I like this kind of program becaus it help me read. Right on!
> (Student 170)

> I think my student has improved and me, too.
> (Student 034)

> The program made me get ahead and to get higher grades.
> (Student 004)

> Twotring (Tutoring) it did me good.
> (Student 168)

> The best thing I liked about this whole thing is that I got to like myself better. (Student 072)

> I liked this readin program because it helped me improve my reading and other things. I like to help my pupil read.
> (Student 044)

> I liked this program because I learned to read better. My student was very nise. and I help hem learn.
> (Student 046)
>
> My totor was very very good and fair and I lerned a lot.
> (Student 164)
>
> I now like reading. I liked the books on Martin Luther King.
> (Student 042)
>
> This program help me a lot.(Student 108)
>
> I like my own seft (self) now.
> (Student 068)
>
> All the things me and my tutor did made me read a lot better.
> (Student 172)
>
> I like my tutor becauze he hlep me read.
> (Student 170)
>
> I like to help pople work. I liked all the work we could do. It is good. (Student 030)

All comments from both the tutors and the tutees were positive, except one tutor. Such comments and personal impressions seem to indicate that psychological and academic achievement changes were indeed taking place and have implications for further research both in the field of education as well as psychology.

The following observations were made by the investigator during the study and also seem worth comment.

One tutee's family moved to another school during the course of the investigation. This naturally separated the tutee and his tutor; however, the tutee was so upset by this move and that it meant not being in the reading program that he convinced his mother to commute him back to the original school for the rest of the year, while his brothers and sisters went to the "new" school. (This particular student had a pre-test reading comprehension score of 2.2; post test score in reading comprehension was 3.9).

After about nine weeks into the tutoring sessions, three tutor-tutee relationships (all lived in the same apartment building) continued their tutoring sessions for three Saturdays. These same three pairs of students (tutor-tutee) took about ten easy reading books home each weekend thereafter and circulated the books in their groups and in their apartment building.

Some parents became interested in the paperbacks which the students were taking home, and requested copies for themselves, particularly books about Martin Luther King.

Some of the tutors, prior to the tutoring program, had frequent absenteeism. Some of them had baby-sitting tasks to do in the home; after the program began, three tutors informed their Mother that they would baby-sit, if necessary, but only on Monday and Friday. They could never miss the tutoring days which were Tuesday, Wednesday, and Thursday.

Interest in books necessitated obtaining books outside of the school. Books from the bookmobile, the public library, purchased paperbacks, and local school resources engendered a circulation of over one-thousand books with readability levels from picture book to grade seven reading level. Books which circulated most frequently included the CURIOUS GEORGE Books by H. A. Rey (Houghton Mifflin); books about Martin Luther King; and the CHARLIE BROWN Books by Charles M. Schulz (Fawcett World Library). Categories which had the greatest circulation included sports, animal stories, and science books.

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